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FARM AND FIRESIDE

EVERY OTHER WEEK

THE NATIONAL FARM PAPER

SATURDAY, JANUARY 3, 1914

5 CENTS A COPY



MY 1914 Resolution: I'm for good roads. We need them in summer and winter. Nineteen-thirteen closed with some mild, rainy weather and slush. Such weather points the finger of scorn at the bad road. I'm for the road that's well made and well maintained. I don't own an automobile now. Whether I ever do or not, whether I'm in this State or another, I'll always work for good roads. A. L. Osborn, Iowa.

LOOK FOR
THESE GOOD THINGS
THAT ARE COMING

“Mr. Greiner Says So”

And that settles the matter as far as many FARM AND FIRESIDE subscribers are concerned. They don't follow him blindly, but they know what he says is based on the actual experience of a lifetime in the garden. He has something valuable on garden irrigation to present to the FARM AND FIRESIDE family.

The Pumpkin

J. W. Ingham is willing to fight for the pumpkin, and he does in his article, “In Defense of the Pumpkin.” You'll be interested in his scrappy and well-placed arguments.

When the Chickens are Sick

Do you know what to do? You may know some simple and effective remedies, but for the speedy recovery of the sick birds and the protection of the well birds there is something else to be done than “dope.” If you don't know what that “something else” is, watch the poultry department.

Hitting the Market

That is the desire of every poultryman, but he may feel that he can't get his birds in shape. He can if he knows how, and F. W. Kazmeier will tell of the best system in his judgment. Read his statement, and if you already have a good way of fattening your poultry see how his ideas and yours compare.

The Best Apple

What is it? There is a reasonable answer to this question, and C. M. Weed, expert orchardist, gives it to FARM AND FIRESIDE.

Will Hogs Stop Rooting?

Of course they won't. Not if they are normal, healthy, unrestricted animals. But the evils of rooting must be overcome in some way. How? It may be best to prevent the hog from rooting. L. K. Brown tells how to do that.

The Church of Leadership

Miss Anna B. Taft, who is devoting her life to social and religious work in rural districts, has written for FARM AND FIRESIDE'S page of Sunday Reading a series of articles upon country churches which have become social centers, and about ministers who have seen deep into the hearts of country people and made use of the strength and sweetness therein to organize and socialize communities. The first of these stories will appear January 17th.

Anna Ammerman, Jelly-Maker

The child in the jam closet is a familiar figure, but we are wont to associate naughtiness and stomachache with the affinity. Here, however, is a story of a jelly industry which keeps five children in health and happiness and clears the mortgage off a farm.

Handicraft for Boys

Here is a lesson in architecture for the children—snow architecture, which provides a simple winter playhouse and accomplishes an unusual engineering feat, the erection of an arch form without keystone or interior support. Here, too, is a lesson in carpentry; learn how good are the sleds which you fashion with your own hands!

By-Products of the Kitchen

Many of the most nutritive portions of our foodstuffs disappear down the waste pipe or into the garbage can. It has been said that the waste from one American kitchen would support two French families, and by “support” is meant, not to fill up with fine flavors barren of nourishment, but to supply the requisite food. What do we do with the water in which our vegetables are boiled? That water contains the mineral salts for which most of us are starving without knowing it. What do we do with the feet of chickens and turkeys? Mrs. Talbott will tell about these things in a series of articles beginning January 17th.

Experience Bazaar

The question asked in the issue of October 25th, “What is It to Support a Family?” has caused many husbands and wives to offer their experiences in the Bazaar. Four letters on this subject of vital interest will be published January 17th. This exchange of experience and opinions is the purpose of the department. Let all those who have wisdom contribute it; all who have perplexities state them.

In This Issue

Taxing Land Values

Most of us think that if all the taxes were put on land values it would be bad for us. G. A. Chipman, whom the farmers of western Canada have made editor of their great co-operative paper, “The Grain Growers' Guide,” tells us why the farmers who have tried putting all the taxes on land values like it, and wouldn't change for the world back to our system, which they think a barbarous system. They've tried it and we haven't. Therefore we ought to read this article. See page 6.

WITH THE EDITOR

What is the
Remedy for Cancer?

I suppose that there is no disease in which more people feel an intense interest than cancer. The letters I have received in response to a recent editorial on the subject are numerous and interesting. In that editorial it was stated there is no known remedy except the surgeon's knife, used when the disease is still localized. I have a letter from a subscriber who has received every number of FARM AND FIRESIDE since the paper was founded, more than thirty-six years ago. He states that in his opinion we made a mistake in saying that the cutting out of the cancer is the only remedy.

“In 1912,” he says, “a lady living near us in Missouri, having a lump in her breast which she supposed was a cancer, went to a ‘specialist’ and had it removed. It has never returned. She thinks she is entirely cured.”

I suppose that this was one of those cases of the removal of the tumor—supposedly cancerous—by the application of plasters prepared according to some “secret” recipe. Mr. Offutt, our old Missouri friend, informs me that he has taken the trouble to correspond with a great many of these “specialists” and has learned of fifteen or twenty scattered over the United States.

“When this friend of ours returned home,” continues Mr. Offutt, “she gave my wife a book sent by this cancer doctor. Among the persons claimed to have been cured by this doctor was a man at Wellsville, Missouri. I wrote to this man asking him what he thought of this doctor's treatment, and what the doctor charged him for his services. He replied that the doctor had permanently cured him some years before. He wrote the names of several other people who had been cured by the doctor, and stated that the doctor had charged him \$100 for his services.

“My wife had what she thought was a cancerous tumor, and concluded to go to this doctor. I went with her. On October 12th the doctor began his treatment of this lump which my wife had had for many years in her breast, and which was growing rapidly. I watched the treatment until October 19th, when I saw him remove the lump, tumor or cancer. It left a hole in the breast as large as the lower half of a teacup. This wound healed and left only a small scar. My wife thinks she is permanently cured.

“This doctor advertised ‘no cure, no pay,’ but when we got there and asked him what he would charge he replied, \$250 when he began treatment, and \$250 more when the cancer was removed. Not knowing of any other cancer doctor I paid him the \$500. He gave me a written statement that if the cancer returned on any part of my wife's body he would treat her free of charge; but this is so worded that we could never get back any part of the \$500 or the charges for board, lodging, or nursing, which were all charged for. He charged one man while we were there \$1,100, and another man \$1,000.”

After a very great amount of correspondence with the patients of this and other cancer doctors, Mr. Offutt, who has made a very intelligent study of the matter, is of the opinion that this man cures cancer in many instances.

Quack Cures and
Other Cures

Perhaps he does. But his methods look very scary. Let us suppose for the present that he does cure cancer, and examine his methods. He sends out a book in which he gives the names and addresses of people claimed to have been cured. People who are afraid they have cancer write these people and are informed that the man does cure cancer, and charges reasonable fees on the basis of “no cure, no pay.” He advertises to treat cancer on the basis of “no cure, no pay.” The person making the inquiry goes to the cancer doctor and finds that the “no cure, no pay” treatment is a myth. He has to pay a big fee in advance, and another when the tumor is removed. People with simple tumors and incipient cancers are swindled out of sums of from \$250 to \$1,100 for treatment which would be given in any hospital for a fraction of that sum.

Perhaps he does cure cancer, though there is nothing in the cases mentioned by Mr. Offutt which proves that he cures it. But cancer is not a hard thing to cure—if it is taken in time, and is located where it can be reached. Doctors Halsted, Finney, and Bloodgood have just made a report on the results of cancer treatment for many years past at the Johns Hopkins Hospital. Such cancers as those of Mr. Offutt's wife and her friend are always cured by surgery, if operated upon early. The records do not show a single failure. Doctor Bloodgood maintains that if the knife is used at the very beginning of the cancerous development, every case can be cured by the knife.

Where the
Surgeon Wins

These “specialists” are not surgeons, but they know that the cancer must be removed. So they use corrosive applications which kill the flesh, and it sloughs off. If it brings the cancer with it, as it no doubt does in many cases, and the case has not gone too far, the trouble will be cured just as it would have been by the use of the knife. But a surgeon would have done it much more quickly, much more safely, and much more thoroughly. And a surgeon would not have charged any such fees, if he were a decent man.

No hospital under the management of decent medical men will ever turn a patient away for lack of money. The poorest man or woman can be sure of getting skillful, scientific treatment in such hands, and the fees will be in proportion to the patient's ability to pay.

Doctor Bloodgood says that cancer almost always starts from a mole, a wart, an ulcer, or an irritated spot. Suspicious lumps, moles, warts, and the like should be examined by a competent physician, and if he advises it should be removed. Suspicious raw and irritated places should be watched, and a good surgeon given a chance to operate the moment they begin to need the operation. If people will follow these directions, and place themselves in the hands of high-class physicians only, and steer clear of advertising specialists who are after money only, they will usually escape this most dreaded of ailments. The doctors know pretty well what to do; and it is now largely a matter of teaching the general public the necessity of acting early. That is why I am writing this.

Robert S. Lister

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PUBLISHED BY
THE CROWELL PUBLISHING COMPANY
SPRINGFIELD, OHIO
Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago, Illinois
Copyright, 1913, by The Crowell Publishing Company
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter

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One Year (26 numbers) 50 cents
Canadian, 1 Year . . . 75 cents
Single Copies, Each . . . 5 cents

Subscriptions and all editorial letters should be sent to the offices at Springfield, Ohio, and letters for the Editor should be marked "Editor."

Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVII. No. 7

Springfield, Ohio, January 3, 1914

PUBLISHED
BI-WEEKLY

The White Whirlpool

UNDER this name we are beginning a series of articles on the dairy business which we believe will clear up many of the uncertainties which beset the minds of the people on this most important industry.

Most farm papers are constantly urging the farmers to pay more and more attention to the dairy business. It furnishes a cash income all the time. It takes less from the farm than any other type of staple farming. It is laborious, but it offers more margin for superior over inferior skill than most lines of farm work.

But does it pay?

The answer to this question is different under different conditions. In some parts of the country the business consists of selling the milk. That has its own problems. There is just ordinary milk, certified milk, special milk—and milk. There are markets in which the distribution has passed from the hands of the producers into the hands of huge and autocratic monopolies. And there are others where the man who milks the cows sells direct to the consumer. In some places the dairymen are harassed by tyrannical board-of-health inspections, and in some there is no inspection at all.

The problems are as different as the conditions. In some places the producers have their own co-operative creameries and cheese factories, and in others the business is in the hands of huge centralizer creameries. In still others the great condenseries are driving the creameries out of business.

The business of making butter on the farm is still important. And the trade with ice-cream factories is large and rapidly growing.

The problem of oleomargarine—or "margarine," as it is coming to be called—is a very important one.

Then there is the matter of breeds of cows, of barns and pastures, of winter milking and summer milking, of the difference between the North and South.

Most of these problems will be treated from the farmers' viewpoint in our series of articles. They will be written by Mr. D. S. Burch, Associate Editor of FARM AND FIRESIDE. Mr. Burch has been a dairy specialist all his life, and speaks not only from a scientific and practical knowledge of his subject, but from a recent survey of the field in which he has traveled over four thousand miles and visited the places where the dairy problems are most acute.

Every farmer, whether he sells dairy produce or merely milks a cow for his family supply, will be interested in these articles. They are the most interesting, the most useful and practical, and the most far-reaching we have published for years. This editorial is written so that our readers may arrange not to miss any of them.

What Do Fat-Stock Shows Prove?

THE prizes at the fat-stock shows are always given to the fattest animals. Of course the conformation of the beeves is taken into account; but other things being equal, the fattest animal gets the prize in spite of what they say about the "feel" of the skin, the texture of the hair, and the other points.

We have always insisted that if the shows are to do the good to the beef industry which they ought to

do, the cost of producing the animal should be taken into account. We have seen carloads of prime steers which were exhibited in feed-lot condition, costing five or six cents a pound, ranked below steers which had been fed for the show, and as they stood had cost their owners much more than they were sold for even at the fancy prices paid for first-premium cattle. The man with the feed-lot steers proved himself the best cattleman, but he did not get the credit for it.

As things are now carried on, utility in feeding is forgotten; so it would seem after close observation.

A writer in the "Oregon Agriculturist" points out another weak spot in the matter of fat-stock shows. "Isn't there," he asks, "after all, in all these exces-

A Sheep Survey of Ohio

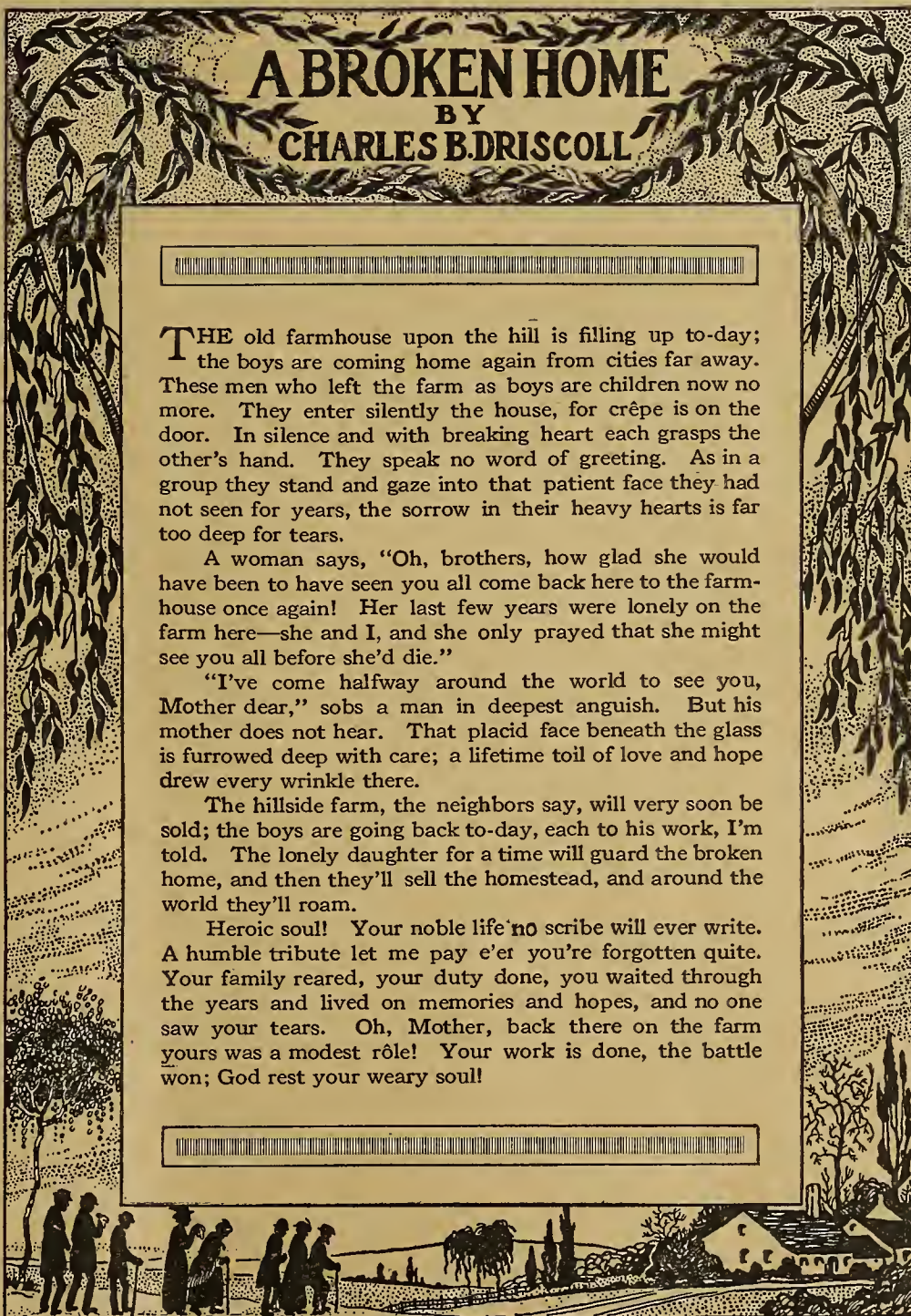
FOLLOWING the suggestion of that fine farmer Joseph E. Wing, Governor Cox of Ohio is moving in the matter of having a survey made of the sheep industry of his State. The underlying thought back of the movement is that we are not breeding the best types of sheep. It is believed that the survey will show that the farms of the State would do far better if they would resort to the use of rams of the English or Down breeds on the existing stock of ewes of Merino blood lines, for the production of the cross-bred lambs which have been found so profitable wherever bred. The only way to learn about a thing is to study it, and the survey will be a good thing. Let us suggest that for the good of the sheep industry the scope of the inquiry should be so extended as to give us a dog survey of the State also. The Ohio dog is the key to the sheep situation.

Uses of Cold Storage

THE McKellar Bill and some other measures now pending in Congress are well-meant plans for curing some abuses in the storage and handling of farm products. The cold-storage industry has gained a tremendous hold on the food supply and should be regulated. In regulating it the law should not forget its real utility. We object to the behavior of the meat-packers sometimes, and with good reason; but we should not forget that the live stock of the United States is now slaughtered and sold by such methods that the difference between the price of meat on the hoof and meat on the hook is less than it could otherwise be. The cold storage of meats is the thing which makes this possible. Eggs are stored in March, April, and May for the next winter's trade. If this could not be done eggs would be worthless on the farms when they are most plentiful, and priceless in the cities when they are scarcest. Apples are sold in every month of the year. If this were not so there would be a market for about a third of our annual crop. Cold storage makes this possible. Grapes are marketed from their time of ripening until into the holidays. Cold storage makes it possible for this to be done, and thus makes the market for grapes. These are some of the many utilities of cold storage to farm and city. Legislation which will prevent the holding of the food supply too long is a good thing. The meats held over unduly are a club by which the prices of live stock are beaten down, and a jimmy by which the consumers' bank accounts are depleted. Eggs in storage after the new supply begins are bad for all parties, since it is the March, April, and May surplus which must be stored. But eggs must be held for more than three months, or there is no use in storing them at all. Some apples should be held until March, some not longer than until December.

Cold storage is a regulator of supply. We all ought to know what is in the reservoir, and the provision for reports of stocks on hand is a wise thing.

LOGANBERRY JUICE sweetened and left in unsealed bottles without heating, in the climate of Oregon, has been kept in a perfectly sound condition for six weeks. There may sometime be a loganberry-juice industry as great as the grape-juice trade.



THE old farmhouse upon the hill is filling up to-day; the boys are coming home again from cities far away. These men who left the farm as boys are children now no more. They enter silently the house, for crêpe is on the door. In silence and with breaking heart each grasps the other's hand. They speak no word of greeting. As in a group they stand and gaze into that patient face they had not seen for years, the sorrow in their heavy hearts is far too deep for tears.

A woman says, "Oh, brothers, how glad she would have been to have seen you all come back here to the farmhouse once again! Her last few years were lonely on the farm here—she and I, and she only prayed that she might see you all before she'd die."

"I've come halfway around the world to see you, Mother dear," sobs a man in deepest anguish. But his mother does not hear. That placid face beneath the glass is furrowed deep with care; a lifetime toil of love and hope drew every wrinkle there.

The hillside farm, the neighbors say, will very soon be sold; the boys are going back to-day, each to his work, I'm told. The lonely daughter for a time will guard the broken home, and then they'll sell the homestead, and around the world they'll roam.

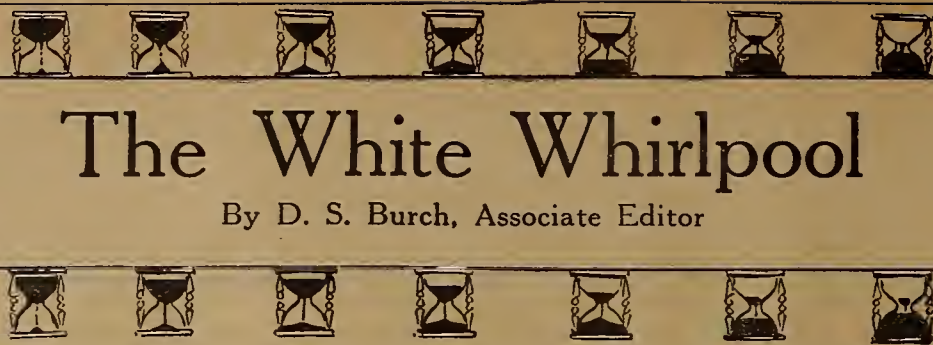
Heroic soul! Your noble life no scribe will ever write. A humble tribute let me pay e'er you're forgotten quite. Your family reared, your duty done, you waited through the years and lived on memories and hopes, and no one saw your tears. Oh, Mother, back there on the farm yours was a modest rôle! Your work is done, the battle won; God rest your weary soul!

sively fat animals a lot of suet that the butcher can dispose of only by sending it out with some excessively lean piece of meat? Does the housewife want a piece of meat surrounded by a two-inch layer of fat? Aren't we at times overdoing the fattening of show animals?"

In other words, aren't we submitting to a system of judging which ignores entirely the matter of economy in production, and very largely the matter of good beef? Aren't we using easy and obvious and old-fashioned methods of judging fat animals? Wouldn't it be better and more scientific if we gave the prizes to the men who feed most economically and produce the beeves which yield the greatest percentage of edible meats of the highest quality?



The Garden of Eden



Twentieth Century Business

The White Whirlpool

By D. S. Burch, Associate Editor

1.—Milk Producer & Company—A Firm of Ten Inharmonious Partners

IN THE beginning Adam and Eve, we will suppose, had a cow which supplied them with milk. Of course the cow, being a gift of the Creator, was their property to start with. It ate the grass of the Garden of Eden, which also was free; and all Adam and Eve had to do was to milk it, and to use the milk, which cost them nothing except their work, and also brought them nothing except the satisfaction that palatable food always gives.

That is the simplest form of dairying imaginable. To-day the dairyman has much more to do. He is, in most cases, not only a farmer raising other crops, but is in turn "farmed" by other interests seeking to profit by his labors. He supports an army of manufacturers of dairy supplies, milk wholesalers, and investigators, and he contributes to the support of the railroads carrying his milk.

Most of these agencies are of real service in creating a market for milk and its products, but they always charge him for their services. So as a dairyman looks sharply around him he finds that he has a great many uninvited partners in the business with him.

To the question, "What are we going to do about these partners?" the answer is, "Make every partner prove that he is bringing more into the dairy business than he takes out of it." If he can prove it, let him stay; he's useful and we need him. If he cannot prove his usefulness, vote him out.

Who are the Working Partners and Who are the "Riders"?

I do not agree with those who would have none but dairymen in the firm "Milk Producer & Co.," which is a convenient name for the dairy business. We need distributors, inventors, salesmen, advertisers—experts of all kinds. But not too many, and they must be real experts. We need a law against misbranded dairy experts as rigidly enforced as the law against misbranded dairy products.

To clearly see all of the dairy business we will first go a long distance off. Then looking at it through a mental telescope, from another planet perhaps, it will look something like the illustration at the bottom of the page.

See! It is made of ten parts, all of which are poorly constructed and most of them inefficient. But it is a good object lesson and our task will be to improve it. Each part must serve the other instead of interfering with its workings, and you will find that we need all the parts which are pictured. The parts are: 1, Educator; 2, Scientist; 3, Legislator; 4, Inspector; 5, Milk Dealer; 6, Common Carrier; 7, Supply Dealer; 8, Consumer; 9, Philanthropist; 10, Producer.

The first partner in our milk business that we will subpoena before our court of inquiry to determine his usefulness is the educator. By "educator" we mean the agricultural professor who teaches our children, who writes bulletins, and who addresses our meetings. His main business is to keep us posted on the best cows, rations, and barns, and to answer our letters when we ask for information.

Considering the scarcity of supply and the salaries offered, the average educator comes up to our expectations fairly well. His most noticeable weakness is traveling in a rut. The easiest method of maintaining a supply of dairy professors is to train bright students to become professors. This method is used by many educational institutions just as we raise calves into dairy cows. But the young men have little chance to learn very much more than they have been taught. Their minds become inbred and they repeat to their classes very much the same things as were taught them when they went to school.

A Dairy Cow is Any Cow That Gives Milk Profitably

Our best real educators are men of experience who talk from their own lives as well as from books. They are men like W. D. Hoard of Ft. Atkinson, Wisconsin, and H. B. Gurler, formerly of Illinois but now operating a splendid dairy near Macon, Mississippi. There are lots of others of the same stamp—you know the type, the men who really do things first before they ask others to follow them. These men are too big for salaried jobs and are not available as professional educators.

So while we must rely to a large extent on the college professors, we must bear in mind they are not infallible. Almost unanimously they still teach the old cow-path definition of a dairy cow, which practical experience disproves. They say that an animal is not a dairy cow unless it is one of those favored creatures which, gifted by having certain blood in their veins, were born into the "big four" of dairy aristocracy; namely, into either the Jersey, Guernsey, Holstein, or Ayrshire breeds.

All of these breeds certainly contain valuable animals. For years they have been bred for milk production, but the name of the breed means just one thing—the original nationality of the cow. The Jersey originally came from the Island of Jersey, the Guernsey from its isle, the Holstein from a province in Europe by that name, and the Ayrshire from the county of Ayrshire in Scotland. Dairying, on the other hand, is a commercial business. The nationality of a machinist does not prevent him from hanging out his shingle as a machinist when he becomes a skilled and qualified workman.

The Danish Cow Discounts the Professors

Then why deny cows having good milk records the name dairy cow because of Brown Swiss or Durham blood in their veins, or because for any reason whatever their nationality is different from that of the "big four" breeds. So any cow that gives a profitable flow of milk I am going to call a dairy cow, regardless of its color, breed, or conformation.

Take the old Danish cow for example. In 1884 her average annual production of butterfat was only 106 pounds. Changing conditions, caused largely by excessive grain-cropping, forced the country into dairying. Imported dairy cows were expensive and money was scarce. So the Danes began to improve what cows they had. By 1908 the average yield of butterfat had been raised from 106 to 224 pounds, and in 1909, the last year of which we have a record, it was 232 pounds of butterfat, equivalent to about six thousand pounds of milk. That is distinctly a good average record for milk and butterfat. Those cows, though not of the "big four" breeds, are real dairy cows, for they have made Denmark a country illustrious the world over for the large quantity and excellent quality of its dairy products.

The Danes care little for conformation, but they follow the laws of breeding, and work intelligently for milk and butterfat production.

There will be an exhibit of the improved Danish cow at the Panama-Pacific Exposition. They are good dairy cows, but we have as good or better in this country, though our average production is lower than in Denmark because we keep so many poor cows. The chief point where we can profit by their experience is by emulating them as herd-builders. What they have done with the poor cows they had to start with, we can do much faster and with better results with the wide variety and choice of selection at our disposal.

All Cows of the "Big Four" Breeds are Not Dairy Cows

The term "dairy breed" is an unfortunate expression, for it emphasizes and advertises breeds rather than individuals. It gives the impression that all cows of so-called dairy breeds are profitable dairy cows when many of them are not.

During the ten-year period from 1899 to 1908 inclusive, W. D. Hoard of Wisconsin conducted a most extensive study of dairy herds in twelve dairy States. The work was thoroughly done by practical experts, and average herds were worked with for a period of one year each. The survey covered 2,163 herds containing a total of 28,447 cows.

The number of herds characterized as having good dairy type, as exemplified by the "big four" breeds, was 652. Yet in one out of every twelve of these "dairy-type" herds the receipts from milk were not equal to the cost of the feed. Some perfectly good cows were probably mismanaged, but the important point is this: the type or the breed of a cow, while a valuable help, is not a guarantee of any animal. The animal's capacity for producing milk is the thing that makes her a dairy cow. Whether pure-bred, grade, or scrub, she must first "make good" at the pail before she is worthy of the title "dairy cow," which is given to many blue-blooded bovine loafers, though considered by the professors ill-fitting for the creature which, though a good milker, cannot show that her ancestors came over from the Isle of Dairyland in the *Juneflower*.

The educators therefore have been chiefly responsible for most of the misinformation that makes so many dairymen believe that if a cow is not a Jersey, Guernsey, Holstein, or Ayrshire it is not a dairy cow. We must reject their advice on this matter and deal with individual animals rather than breeds. We want profitable cows in our herds regardless of their breed, just as we want competent help regardless of their nationality.

Occasionally the educators disagree on questions, and though the majority may be right, a small minority can, if active, do havoc, provided they have a plausible proposition, for example the dual-purpose-breed question.

Perpetual Motion Schemes and Dual-Purpose Breeds

A professor in the Iowa State Agricultural College some years ago advocated the Red Poll as a dual-purpose breed. Influenced by his advice a large number of Red Polls were introduced into the State. Some of them, and a good many more of their offspring, turned out to be beef animals, and after wasting time and money the owners gave up the dual-purpose idea. Minnesota suffered a similar experience with grade Shorthorns.

Some well-managed individual efforts have also been fruitless. An experienced breeder in southern Minnesota who had ample capital purchased a number of "dual-purpose" breeding animals which answered his every requirement as foundation stock, and bred them toward the generally accepted dual-purpose type. The work was done with care and skill. No expense was spared to get the best bulls and to control all conditions. At the end of eight years the herd gave less milk than an equal number of his neighbors' scrub cows, and was just average for beef.

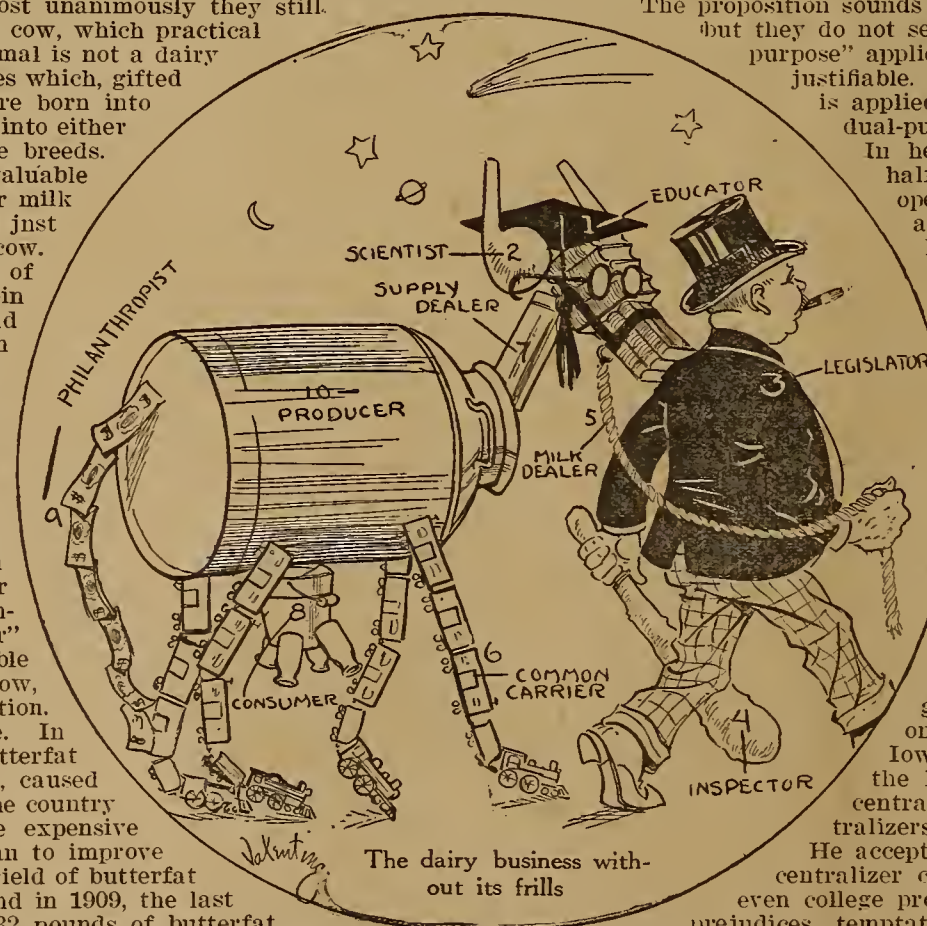
J. J. Hill is now spending a small fortune to develop a dual-purpose breed. We hope that he will succeed, but are nevertheless glad that the experimenting is in wealthy hands, for it is too precarious a risk for a man who is dairying for a living.

The proposition sounds good,—so do some perpetual-motion schemes,—but they do not seem to work out successfully. The name "dual purpose" applied to a cow valuable for both milk and beef is justifiable. The false step is taken when the same name is applied to a breed, for it is in the breeding that the dual-purpose enthusiasts have had their chief trouble. In heredity nature aspires to perfection, not to a halfway course, and it is hard to control breeding operations so the offspring will be milk and beef animals simultaneously. While the educator is hired chiefly on the basis of what he knows and can tell others, his unconscious mistakes may be pardonable. But an unpardonable offense is the use of his office for selfish motives.

Ambition That Interferes with Efficiency

The bulletin craze is found in the younger men, and even among mature professors, each bulletin published whets the ambition for another. This helps to explain the existence of many poorly prepared and half-baked bulletins, especially the kind that contain page after page of academic data but have no concise summary to make them useful. Personal ambition for a higher position has also been the cause of internal difficulties in a number of agricultural colleges. When professors cannot get along together in harmony the usefulness of the college to the State is greatly impaired. Money also has an influence on some professors' judgment. A professor in the Iowa State College was an earnest champion of the local creamery system as against that of the centralized creameries until he was offered by the centralizers a much better paying position in their employ. He accepted it, and from that time has championed the centralizer cause. So, as dairymen, let us remember that even college professors are but human and are not above the prejudices, temptations, and feelings common to all men. The verdict of the jury on the case of the educator therefore reads: The educator is guilty of serious irregularities in his conduct, but in recognition of valuable services rendered he is retained in the firm of Milk Producer & Co., on condition that his future energies be devoted to the public welfare.

[TO BE CONTINUED]



The dairy business without its frills

In brief, the dairy business needs—besides producers—educators, inventors, and experts of every kind. But they must all work for the common good. Custom has given the professor a veneer of dignity. Remove it and he is as ordinary as the rest of us. The firm of Milk Producer & Co. has a right to expect and to insist on better service than the educator has been rendering.

Studying Fertilizers Without Books

—Methods of Soil Enrichment Worked Out in the South by an Ex-Slave

By Clyde A. Mann

FROM one hundred and sixty acres of depleted land in Alabama, on which white men had not been able to eke out a living, a former slave has produced a fortune by following his own system of soil enrichment. For four miles up and down the Kowaliga Creek in Elmore County, the fields and the standing long-leaf pine timber nearly all are his. But beside there are blooded cattle and horses, cotton gin and sawmill, and probably other assets elsewhere.

The land which would produce no more than a fifth of a bale of cotton to the acre has, under his methods, yielded year after year increasing crops of cotton and to-day produces on his big acreage from one to one and a half bales. Long before the practice of burning the cotton seed ceased through the South, years before the value of cotton-seed meal for fertilizer had been discovered and heralded by the Government and every experiment station, John Benson was following a systematic use of cotton seed to "bring up" his land. He used the cotton seed with other vegetable matter, including leaves from the woods and barnyard manure, for making a compost which in the fall he put in trenches in the field and covered with soil. Buried there it heated and decayed, the steam being a notice to neighbors that Benson's fertilizers were at work during the winter, manufacturing ammonia for boosting the crop yield of that field yet another fraction of a bale beyond the best of the year before.

There has been system and order in his operations, and a degree of honesty that has made his word as acceptable as his bond. These have brought a degree of success that is the most remarkable in the fact that it was won despite the general race prejudice against the colored man which was nowhere more pronounced than in Elmore County, Alabama. Moreover, what he has done and the way he has done it has abated in the measure that very prejudice.

"Three men had given up this farm when I took it, and I probably but for my wife would have paid rent and got off at the end of the first year instead of making the payment agreed upon if I bought it," Mr. Benson said reflectively as he stood in his front "gallery" and grimly watched a young surveyor tramp down the road, transit on his shoulder, running lines for a power company. "But when I spoke to the owner about giving it up his reply rather challenged me to keep it. He owned a lot of land and a lot of slaves, and had a way of shoving his specs up on top of his head when he was put out. And my wife said, 'This is better than no home,' and so we stayed."

One of the first things he did when he had made a payment on his purchase was to get a cow, and it has been a method peculiar to Benson to pen his cows first on one spot and then on another spot on his fields. Fertilizer meant fertility, and even the droppings

were gathered from the lanes for the compost heap. The vegetable matter and barnyard manure were not collected in a hit or miss fashion either. First there would be spread out the manure, then a layer of leaves and cotton-seed meal would be added and beaten down with shovels, then another layer of manure, and so on as the pile grew. No facts of soil chemistry or analysis of organic matter were available to aid him, but Benson saw that the cotton grew better and better as he followed out this system, and consequently he persisted in his compost piles and penning his cows.

Never has his soil been given a wild debauch on the commercial fertilizers which have been used by the farmers of the South with such false faith and in such abandon. Each year his fields have had their regular meals of organic matter, and consequently they never have had to lay off to sober up.

It is a hilly region, Elmore County, and devastating "washes" long ago taught the severe lesson of terracing or cross-hill shallow plowing to prevent a down-

one time five thousand acres. He and the Kowaliga School, of which his son is head, now own together over twelve thousand acres. On that owned by the school there is square mile after square mile of long-leaf pine timber containing several hundred million board feet. To this the son has arranged to build a railroad, a process which has necessitated the son mastering intricacies of tariff sheets and traffic problems in the realm of business such as John Benson never dreamed of in his patient industry when, in 1869, he set himself to the task of paying for a farm in addition to making a living where three white men had tried and quit in despair.

Standing on the knoll near the Benson homestead, one can see the ridge across the valley where Ezekiel Taylor, an old Confederate soldier, has his home and farm. Taylor admits that he and others who were slave-owners before the war were "slave poor" and didn't know it; that they are better off to-day, have more on their tables and more on their backs than they did when they owned slaves.

Emancipation then marked an era of progress like the more recent abolishment of the "crop and credit" system in the South, which compelled diversifying of crops, and which was one result of the ravages of the boll weevil. But John Benson maintains that the greatest curse the South has known, greater than slavery or the boll weevil in the effect on agriculture, is the improper use of the commercial fertilizers which have burned out the soils without leaving any permanent food for crops. His success, covering a period of over forty years, certainly is to be attributed to a system which produced permanent as well as immediate results.

EDITORIAL NOTE—Our contributor's account of the accomplishment of an untutored negro was and is a challenge to better farming. Nevertheless, the modern farmer of intelligence cannot afford to take a decade to accomplish what can be brought about in two or three years. The new agriculture can accomplish the same results in a fraction of

the time required by the old negro's plan by making use of legumes for cover crops to furnish the indispensable vegetable matter, resulting nitrogen, and moisture capacity. The process of soil enrichment can also be hastened by using commercial fertilizer to obtain a heavy growth of cover crops, fodder, and grain crops, and by these means feed more stock and get his operations more completely on a permanent footing.

A farmer worthy of the name these days does not "debauch" his land with commercial fertilizer, but uses these fertilizers in just the quantity needed to supply plant food that is lacking in the soil. He also knows that cotton seed fed to stock returns him two profits instead of one when fed to the soil direct. Any kind of fertilizer used in excess is a hindrance.

The Way of the Waster—By William Johnson

THE way of the transgressor is hard, but thrice harder is the way of the waster. Adversity reaches with a hundred hands of frost, heat, blight, disease, and insect life for the farmer's wage. Waste crosses the palm of every such hand with gold that toil has won but which methods have lost.

And the waster seems not to know the nature of his affliction. Unknowingly he has made gods of mismanagement, prejudice, and neglect. To these his straw stacks are a burnt offering, and a tithe of all he raises or should raise, is given.

He selects his seed corn from the crib and prepares a shallow seed bed consisting of lumps, air spaces, hardpan, and weeds. Or he sows grain on land which is pleading for alfalfa or clover. The season is half wasted because the crop is a half failure.

The waster puts a breedless cow in a sunless barn and gives her a milkless ration, and his soul is much disturbed because there is no profit in the arrangement.

He gathers unto himself a flock of scrub hens and uses them as a medium through which to feed a hundred dollars' worth of grain to mites, lice, and weasels.

He keeps his hogs in pens, and the hog cholera germ waxes vigorous in the mud. He looks upon vaccination as a flimflam, and the land which should be growing alfalfa pasture is pasturing the corn-root louse instead. On the waster's farm grain is not treated for smut, nor is the quality of seed ever questioned by test. Cheap grass seed is sown, and an annual increase of weeds lift up their bright blossoms in a psalm of thanksgiving to waste.

Waste is an unwritten mortgage, but legal form and notary could not make its interest surer. Could we see in actual cash the toll it exacts, our souls would rise in revolt. It takes the grain before it gets to the bin, the milk before it gets to the pail, the hog before it gets to market. Waste works in countless ways its robbery to perform, but it travels one broad road—mismanagement.

And the remedy is watchfulness.

pour of April rain from carrying tons of the best soil down into the valley. Benson has sedulously terraced and cross-plowed as well as fed his acres. This means much more careful farming than is practiced in the North, for a "forty" is usually cut up into as many irregular-shaped fields as the contour requires. This calls for a practiced eye and a skillful hand, for many fields are ruined by one blundering furrow that, becoming a trough for drainage, deepens and is left an ever-widening ditch so deep a hundred mules could be buried in it.

His first farm, of one hundred and sixty acres, so hesitatingly purchased, was paid for at the end of the second year, and for years John Benson annually added to his holdings a farm or two until he owned at

Our Confidence in the "Water Witch"—By Fred Telford

THERE are few country communities without a man known as a "water witch." A "water witch" is popularly supposed to have the power to locate streams or lakes of underground water, and is frequently employed by those putting down wells to locate the most favorable spots.

Though minor details differ, all "water witches" work in essentially the same way. The witch first selects a peach or hazel fork, trims it carefully, and then holds it in both hands as shown in the picture. He then walks about in various places suitable for a well. Whenever he passes over water the fork is supposed to be attracted, and instead of remaining upright it turns downward. The more water below, the more violent the turning. Often the "witch" traces what he calls underground streams, and his favorite device is to have his employer dig at the crossing of two of these streams.

Just how much faith is to be placed in the ability of a "water witch" to locate underground water? Many farmers have been confident to the extent of twenty-five dollars; many more to the extent of ten dollars; and it would be difficult to tell how many have given up smaller sums to these men. Certain it is that many a farmer has followed their directions and found plenty of water. But, for the matter of that, it is likewise true that many have secured good wells without their aid. So finding water proves nothing.

An incident that occurred in southern Illinois goes far to show the worth of "water witches." A farmer had put down several wells to a considerable depth without finding a sufficient amount of water. Finally he decided to call in a "witch" who had located many of the best wells in the community.

The trial was made before a large number of neighbors and visitors. The "witch," with a fork from a peach tree held in the approved fashion, walked about in all sorts of likely places. In a short time he had

traced two underground streams, and had marked the place where he claimed that they crossed.

"Dig there," he announced, "and you'll find plenty of water. You won't have to dig very deep either."



Does he all the time delude himself?

Perfectly satisfied, the employer was preparing to turn over the fee, ten dollars. But one of the visitors who had made a study of soils and who owned an adjoining farm was skeptical.

"You're sure the fork will always turn for you at that spot, are you?" he queried.

"Not a doubt of it," was the confident reply.

"You wouldn't object if I tested you further?"

"Not at all."

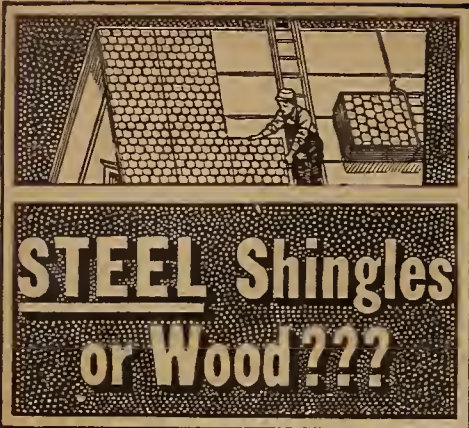
"Not even if I blindfolded you and tested you?"

"I tell you that fork will turn for me whenever it is above a good stream of water, no matter what you do or say."

Then came the test. Sure enough, the fork turned in the blindfolded "witch's" hands; but, strange to say, it turned erratically. It turned in places he had labeled dry. It sometimes turned above the underground streams he had traced, but usually it did not. It failed to turn even once at the "crossing," though the "witch" was led over it again and again. And it never turned twice in the same place.

This test only showed that there is absolutely no reason for believing that water attracts peach or hazel forks in a peculiar way. Moreover, scientists assert that the weight of the earth is so great that there cannot be the underground streams and lakes of open water that "witches" profess to believe in. One thing is absolutely certain: the "witch" who fails blindfolded has no ability to locate good places to dig wells. And there is no record that any "witch" ever withstood this test.

The explanation of the apparent success of many "witches" is not hard to find. As a matter of fact, much of our country is underlaid with water-bearing gravel and sand, and if a well is put down to a moderate depth it is usually impossible to escape finding plenty of water. Those "witches" who honestly believe they have the power to locate underground water (as was the case with the one mentioned above) merely delude themselves. The fork, as it is held, turns very easily. Any misstep, such as might be caused by unevenness in the ground, may result in the slight pressure that causes turning. Then, when the "witch" approaches the spot again, he expects the fork to turn, and unconsciously he makes it do so, just as the person who is sure burglars are in the house is always able to hear the noises they make.



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Why Western Canadian Farmers Favor the Taxation of Land Values

By G. F. Chipman

A TRAVELER going through the prairie provinces of western Canada on a railway train soon observes that the millions of acres of rich country, in many sections through which he passes, have no habitations in sight. He will be still further surprised that back beyond the range of his vision, maybe ten to twenty miles from the railway, farmers are living with their families and are industriously engaged in developing comfortable homes for themselves. The natural question to ask is, "What on earth are the farmers doing so far from a railway when there is an abundance of vacant land alongside the railway?" The answer uncovers one of the worst evils which burden the farmer of western Canada. This vacant land which has attracted the attention of the traveler is owned by the railway companies and other land speculators who are holding it idle while the farmers continue to labor and increase its value.

Why so Far From Railroads?

The speculator, after the farmer has worked long enough to suit him, will sell the land which he bought for from three dollars to ten dollars an acre for from twenty-five dollars to fifty dollars an acre. In the case of the railway companies the land did not cost them anything, as it was donated to them by generous politicians in years gone by, as a reward for building the railway with the people's money, or on the people's credit. The amazing prodigality of the Canadian Government in handing out public land and other natural resources to corporations is now reaping its evil harvest.

If all the land actually cropped in Manitoba, Saskatchewan, and Alberta were laid close to the railways, none of it would be more than two miles from a railway. Of course this is an impossible proposition, as much is needed for pas-

Thousands of the Canadian farmers are living from twenty-five to two hundred and fifty miles from railway facilities, yet all the Manitoba, Saskatchewan, and Alberta land that is actually cropped could be laid within two miles of the present railroad systems.

Why are these things so?
The answer is not hard to find.

ture. There are about two hundred thousand farmers in the three prairie provinces. Each of them could have three hundred and twenty acres and none be farther than seven miles from the railway, or six hundred and forty acres within fourteen miles of a railway. Yet thousands are living from twenty-five to two hundred and fifty miles from railway facilities. And as they work for the support of their families, fully half the wealth they produce is quietly absorbed by land speculators who have the millions of acres of idle land while the farmer needs.

No Taxes on Improvements

The land policy is the cause of this remarkable situation in western Canada. The land speculator has been allowed to come into the country and buy land at low prices, keep it in idleness, and in a few years reap the result of the farmer's labor. Millions of dollars every year are paid to land speculators in the cities of Canada, United States, and the Old Country as a tribute which the law allows them to levy upon the farmers who are growing wheat. The only way in which this burden can be lifted is to adjust the system of taxes so that it will not be profitable for men to hold land in idleness that other people want to use. This "dog in the manger" policy of keeping land out of use and refusing to allow other people to use it without payment of a heavy toll is arousing a great agitation in western Canada.

These facts set forth above will surprise many people who regard the taxation of land values as a sure method of eliminating the land speculator. Western Canada has been pointed to from every corner of the world as the place where land-value taxation has resulted most satisfactorily to the farmer. This statement is

Mr. Chipman represents the grain-growers of western Canada. He is editor of "The Grain Growers' Guide." He knows the Canadian farmers and why they favor the taxation of land values after having given that system a thorough and impartial trial.

quite correct so far as it goes. None of the farmers in western Canada pay any taxes on their buildings, machinery, or any other improvements, their land being assessed at the same rate as wild or unimproved land lying alongside them. If this precaution had not been taken the speculator's harvest would be even greater than it is. Naturally the problem now being discussed is how to place the burden on the speculator.

Owing to the remarkable growth of population in these western Canadian provinces through immigration from eastern Canada, the United States, and Europe, the value of land is increasing at a rate probably unknown in any other portion of the world. Unimproved farm land is increasing in market value from one to two dollars per acre annually, and in many cases double this figure. True, the farmer who owns his land gets the benefit of this increase in part. But as this increase in value is caused entirely by the presence of the people it is becoming generally felt that this "people value" of the land should be used for the benefit of the people and not for the benefit of the speculator.

Despite the fact that the improvements on farm land in the Canadian prairie country are exempted from taxation, there is a movement afoot to increase the taxation on idle land. In fact, a beginning has been made in the Province of Alberta. A few years ago, under new rural municipal legislation, each rural municipal council was given power to rebate to farmers twenty-five per cent. of the taxes levied upon cultivated land. The result of this would be to make the taxes heavier upon idle land held by the speculator. The Government of Alberta has announced that it is intended to extend this power so that one half the taxes on cultivated land may be rebated. This action will place a very heavy burden upon idle land, and yet will not be in any way an injustice because the owner of the idle land is performing absolutely no useful function and can relieve himself of his heavy burden immediately he begins cultivation.

To Rebate Portion of Taxes

The people in western Canada are realizing day by day that the Creator made land for the use of the people. They are also realizing that the man who holds good land out of use is of no good to the community because he is levying a tribute upon every industrious farmer in the district through the increase in the value of his idle land. For this reason the farmer is favorable to placing as heavy a burden as possible on the speculator.

Those who realize that the taxation of land values will put the speculator out of business are endeavoring to show that the farmers will be the losers by this new method, but the farmers in western Canada have studied these facts and are too wise to be fooled by such a bogey. In the heart of the city of Winnipeg an acre of land is worth \$2,500,000, or as much as a hundred thousand acres of farm land at twenty-five dollars per acre. The total value of the land in the city of Winnipeg and its suburbs is approximately equal to the value of all the farm land in Manitoba that was in crop during the past year. With this fact before them the farmers know that the burden is not going to fall as heavily upon them as upon city land where the value is higher. This is the distinction between taxing the land and taxing the land value.

Immigration and Speculation

The land used by the farmers is taxed no heavier than the idle land held by the speculator. This would seem to make the burden of taxation on the speculator

heavy enough to force him to sell. But it is not. The heavy immigration offsets this difference.

The farmers in each of the prairie provinces of Canada are organized into Grain Growers' Associations numbering about fifty thousand, which consist of eight hun-

dred local community organizations that meet fortnightly or monthly and discuss these and kindred questions. Practically every one of these organizations has declared for the abolition of the protective customs tariff, and a great many have declared for absolute free trade, and for the taxation of land values to raise all revenues. A campaign of education is being carried on by the farmers themselves, such as has never been seen in Canada, and there are thousands of farmers in these organizations who can easily cope with any politician who comes before them with the argument of protection or indirect taxation.

Benefits Already Derived

I would not want it to be understood that this article is intended to paint a dark picture of western Canada. The conditions such as have been revealed are worse for the farmer in those parts of Canada where every building, together with all his implements and stock, is assessed, as well as the land. The farmers of western Canada have been benefited immensely by having their improvements exempted, but this benefit has in good part been absorbed by the railways, banks, loan companies, and protected manufacturers. There is no other country in the world where direct taxes from so large a territory are raised from the value of the land. The result is that the farmers as a whole are becoming rapidly aware of the iniquity of all other taxes. They see more clearly than farmers who are taxed on everything that the value of the land is the only value cre-

What creates the value of land?

What is the difference between taxing the land and taxing land values?

What has been the experience of western Canada in dealing with problems affecting taxation?

These are questions every one of us ought to be able to answer intelligently.

ated solely by the presence of people, and that it is therefore the natural source of public revenues. They see also that the farmer is not the man who owns the valuable land. They know that land increases in value as population increases, and therefore that those who live close to town and enjoy greater privileges should rightfully pay more.

Here is the argument frequently used by farmers who advocate the taxation of land values: Suppose that the population of a good-sized town could all be moved over night to a farm on the prairie, what would happen? The value of the land in the town they had vacated would disappear, while the value of the farm on which they settled would soar at once. Such a striking truth shows at once what creates the value of land, and many a skeptic becomes converted.

Taxation on City Property

The agitation in western Canada for the wiping out of the protective tariff and the abolition of the land speculator by heavier taxation on land values will not cease until the remedy is secured. Politicians are already falling in line, and the agitation in Great Britain is being strongly felt in Canada where thousands of Englishmen are coming mouthily.

As this article is intended to be read by farmers, no attention has been paid to the taxation in cities in western Canada. It might be mentioned, however, that the cities of British Columbia raise their revenue by taxing land values, and their buildings are not assessed.

The very same method applies to the city of Edmonton in Alberta, and a campaign is afoot in practically every city in the West towards the same end. Our aim is to lift the taxes off of industry and not punish the worker for the benefit of the idle.



Live Stock and Dairy

Buck and Bright and Me

By E. D. Ross

YOU want to take their picture, Mister?
Well then, sir, here we be;
But if you snap at Buck and Bright
You'll have to snap at me.

We always have stood by each other;
We're chums and friends, we three.
I know them well, and they know me,
By "Hush" and "Haw" and "Gee."

My father raised them from little calves.
And I know that you'll agree
That finer oxen than these are
You never before did see.



Of course they're slow old fellows,
But Father says that he,
Instead of an auto, would rather have
Just Buck and Bright and me.

The picture's all took, is it, Mister?
Well then, we'll be on our way,
We've got a day's work before us.
Whoa, haw; Gee, Buck! Good-day.

Treating the Swollen Hoof

By Dr. A. S. Alexander

"I HAVE a yearling buck that has been lame for nearly a month," writes a Kentucky subscriber. "His right fore foot is swollen, just above hoof. Several times I lanced it and got matter out, put peroxide and an ointment on it. About a week ago a yearling ewe became lame. Could they have what is called foot rot? The hoof has not rotted, though the foot smells badly. The swelling has forced the two parts of the hoof apart until they are wide open."

Poultice the affected foot of buck with hot flaxseed meal for a few days to perfectly cleanse the part. Wash off the poultice material, and then with a sharp knife cut away every particle of loose under-run or diseased horn of hoof. Now immerse foot for a few minutes in a hot saturated solution of sulphate of copper (bluestone). When this has been done, cover all sores and portions of the hoofs with a mixture of one part each of calomel and subnitrate of bismuth and six parts of boric acid. Then cover with antiseptic cotton and a bandage. Renew the dressing once daily until the foot is sound, but during treatment be careful to remove any further portion of the horn that should become loosened by under-running of pus. Should the swelling of the hoof head persist, bathe it once a day (before using the powder) with a hot solution of eighteen grains of sulphate of copper to the ounce of water. Had the latter treatment been instituted and persisted in from the outset of the case, the spread-apart condition of the hoofs would not have taken place. I am afraid that it may be too late now to perfectly remedy the condition.

When you have trouble from foot rot among sheep, always separate the affected animals and place them in a dry, clean pen or yard. Also change the other sheep onto new, sound, dry pasture. Ordinary treatment for foot rot of sheep consists in cutting away every part of diseased hoof, then immersing the treated foot in the hot solution of sulphate of copper, and at once turning the sheep into a pen on the floor of which three or four inches of slaked lime has been spread. Keep the sheep there for a few hours until the treated feet are well covered with lime. Repeat the treatment as often as found necessary.

The Good Big Horse

By John P. Ross

THAT "a good big horse is better than a good little one" is an old saying which, though generally true, is open to many exceptions, especially among brood mares. Size and great weight are necessary in draft horses for heavy farm work and on the paved streets of cities. There is also from fifty dollars to one hundred dollars difference in the market value of one weighing from eighteen hundred to two thousand pounds and another from fifteen hundred to sixteen hundred, yet it by no means follows that the dam must be of great size.

There are in all the draft breeds big stallions able to give to their offspring from almost any mare much of their own

great weight and height, provided always that the mare is of bodily conformation that will enable her safely to bear big colts. I have in mind a half-breed twelve-hundred-pound mare that year after year drops colts which as yearlings are bigger than herself, the sire being a seventeen-hand, twenty-four-hundred-pound Shire.

Still, as a rule, it is safest to breed from big mares when big colts are desired; for horse-breeding is a freakish business, and it is by no means unusual to find mares that impress their own individuality on their colts regardless of what horse they are mated with, while others reproduce in their offspring very closely the characteristics of the sire. These latter are the most valuable because they enable the breeder to maintain with more certainty the type he has set out to raise.

Next to, or even better than, the study of any model, the fitness of a mare for breeding is to be seen in the quality of her progeny if she has been bred, and if a view of them is obtainable.

Why I Like the Shire

I have refrained from expressing a preference for any one breed of draft horses because most men at all interested in the matter have a decided bias in favor of some one of them, and would probably succeed best in raising colts of that breed; but I must confess to a firm conviction that the English Shire horse is best fitted to the requirements of the farmer who intends first to use both mares and colts on the land, and eventually, when at the right age, to sell the latter as city drafters.

If cleverness in trotting and smooth looks were leading features in what is required, I should probably prefer the Percheron; but since a quick, firm, well-balanced walk and instinctive knowledge of when to throw their weight into the collar and when to ease up, how to avoid impediments, a ready comprehension of what is required of them and a prompt carrying it out, and an almost universal good temper is what is wanted for their class of work, the Shire horse is, I believe, unequalled. All four of the leading heavy-horse breeds have their specially good points.

Teaming in London

Having had experience with all of them for the dual purposes of farm and city work, my convictions, as above stated, are pretty firmly rooted, dating back to my boyhood days.

I can well remember how, on visits to London, I would delight in trotting along on the side of one of the big brewer's teams of two or four gigantic specimens of this breed hitched tandem fashion to a load of four or five tons, winding their way in and out through the crowded street traffic, guided only by gentle pointings of the long whip or a quiet word of their driver, who strolled quietly along on the sidewalk.

The leading horse never seemed to take his eye off that whip, or to fail instantly to catch and to obey its slightest sign. Much of the charm of this, I dare say, arose from the fact that the home farm was in the center of the country where many of them were bred, and I used sometimes to think that I recognized in those different surroundings old friends I had known in their colthood days.

THE man who is inclined to "let good enough alone" often fails to put on those finishing touches that bring the extra dollars.

Overcoming Automobile Fear

By David Buffum

A MARYLAND reader writes me concerning his horse which is afraid of automobiles. If the automobile comes up in back of the horse he will stand quiet, but he cannot be made to pass one coming toward him. He will stand up straight on his back feet and whirl around. Otherwise he is a good work horse.

He'll Soon Get Used to Them

If one lives near a road where automobiles are constantly passing, the best thing to do is to tie such a horse securely to the roadside fence if it is high enough to prevent him from jumping over it and strong enough to prevent him from breaking it. The halter, rope, and the post to which he is tied must also be strong. After standing there for several days he will be thoroughly accustomed to the passing of automobiles. If they pass with sufficient frequency he will become so used to them that he will eat his grain and scarcely notice them as they go by.

When he no longer has any real fear he may be driven with a "controller," described in a previous article. Now, when you meet an automobile, drive along as if nothing unusual were going to happen; but if the horse begins to act unruly apply at once the pressure on the controller, which will elevate his nose and keep him standing still till the automobile has passed. The treatment is simply first to cure him of his fear and, when he no longer has this excuse for his conduct, to make him obey your will in submitting quietly to the automobile's passing.

The Barnyard Chorus

ONLY a dozen years ago, and on many farms, sweet clover was fought tooth and nail whenever a few plants of this "weed" showed their heads. Now on many farms throughout the country sweet clover is proving just the thing to grow on dry, barren knolls, gullied hillsides, rocky, ledgy fields, and on tillable lands is valuable as a soil improver to inoculate and enrich the soil for alfalfa.

As these experiments go on, the truth becomes evident to the experimenters that cattle, horses, sheep, hogs, and poultry only need to get an occasional taste of sweet clover in order to acquire a decided liking for it. It's like onion to the human palate. Once the tangy taste of sweet clover is established among stock, there is a chorus of neighs, "moos," "baas," grunts, and cackles for it.

A WRITER in the "Rural New Yorker" states that co-operative calf-raising is a new industry among the dairymen of his neighborhood. Men who like the veal business buy the calves of their neighbors as the cows freshen, and instead of selling milk turn it into veal. This plan gives the veals a six weeks' growth or more, decreases the milk supply when there is too much of it, and increases the supply of meat. It would seem to have some general advantages over the killing of the calves at or shortly after they are dropped—if the veals can be made to show a profit. But it can scarcely be called co-operative.

BE SURE your neighbor has as good a neighbor as you have.

A Full-Gallon Goat

By Elizabeth J. Rice

ABOUT the middle of September, 1911, my husband and I drove from Los Angeles to the Swiss goat dairy in Pasadena. We could not keep a cow in the city, so we decided to try a goat. Pure-bred Toggenburgs were scarce and high in price—kids, twenty-five dollars up to fifty. Not expecting to pay so much, we decided to take a six months' old kid, half Toggenburg and half common California breed. She was a gentle little creature, almost pure white with just a little brown on the shoulders.

She was bred the first of January, 1912, and brought two kids the first of June. We began to take half the milk in two weeks and entirely weaned the kids in six weeks. We got nearly three quarts of milk a day for several months, then the supply gradu-



She easily took the cow's place

ally decreased until in ten months we dried her off. She was again bred in the fall of 1912, and brought three kids the last of March, 1913. We kept the uanny kid and gave away the others. For five months she gave a full gallon a day.

The milk is of the finest quality, superior, if possible, to the finest Jersey milk, although the cream does not separate so well, but there is a very nice cream if the milk is allowed to set twenty-four hours.

We find a milch goat is the cleanest animal there is. No flies ever trouble them and they are clean in all their habits. We feed alfalfa hay and beets. In this climate we can keep beets growing all the year and we can get alfalfa hay at any time. A few rows of Golden Tankard beets and six hundred pounds of hay will feed a milch goat for the year.

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FREE

Dan Patch

(1:55)

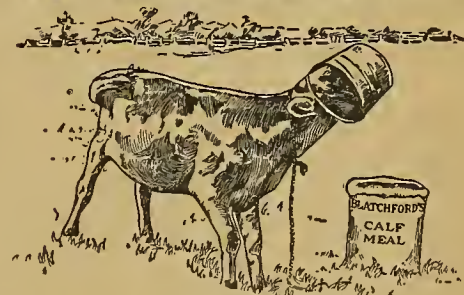
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P. S. There is an "International Dealer" in your City who sells "International Stock Food Tonic," the Largest Seller in the World for over 25 Years, and All of my Twenty-Eight Preparations on a Spot Cash Guarantee to Refund Your Money if they ever fail. Ask Your Dealer about them or ask for this book.

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SKIN CLEARED

By Simple Change in Food

It has been said by a physician that most diseases are the result of indigestion.

There's undoubtedly much truth in the statement, even to the cause of many unsightly eruptions, which many suppose can be removed by applying some remedy on the outside.

By changing her food a Kan. girl was relieved of an eczema which was a great annoyance to her. She writes: "For five months I was suffering with an eruption on my face and hands which our doctor called eczema and which caused me a great deal of inconvenience. The suffering was almost unbearable.

"The medicine I took only gave me temporary relief. One day I happened to read somewhere that eczema was caused by indigestion. Then I read that many persons had been relieved of indigestion by eating Grape-Nuts.

"I decided to try it. I liked the taste of the food and was particularly pleased to notice that my digestion was improving and that the eruption was disappearing as if by magic. I had at last found, in this great food, something that reached my trouble.

"When I find a victim of this affliction I remember my own former suffering and advise a trial of Grape-Nuts food instead of medicines."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville." in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

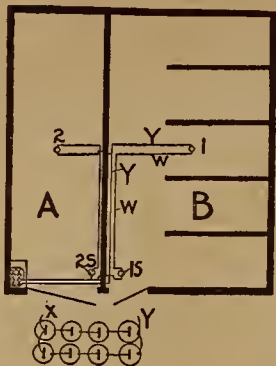
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Electric Lights in the Barn

By Marion A. Russell



ONE night I came home late. It was very dark, and having no light handy I started to enter the stable (B) and ran head first into one of the horses that had backed out of his stall to the hitch-strap's length. As it was, the horse was gentle and nothing happened.

But it started me to thinking. Had this horse kicked, I might have been worsted. Here is what I did:

I secured some annunciator wire and strung it up as shown, starting at the stable-door, where I located a round-base one-point switch. The wires were run up a post to the joist-bearer, thence along the joist-bearer to the middle of the stable (as I keep my driving-horse in the middle stall), thence along a joist to about the middle of the stall to the lamp-base. This wire is lettered W.

Starting at the lamp, I ran a wire back (Y) to the battery-shelf. Another string of wire (X) was started from the battery-shelf and run to the joist-bearer. A wire was dropped from X at the joist-bearer and connected to the lever binding-post of the switch (1S). Wire W was connected to the point binding-post.

In placing switches, care should be taken to put the point up as high as possible so that the light will not be liable to be turned on accidentally.

Realizing how convenient it was to have a light in the stable, I decided to put one in the buggy-shed (A). I located the lamp about the center, then ran a wire from the lamp as Y to Y from stable lamp. Then I started another wire from lamp No. 2, running it along a joist to the wall, thence along the wall to the door, where I dropped it to the switch (2S) conveniently located and connected it to the point on the switch. I ran another from the lever point up to the wire X from the batteries.

For my equipment the cost was:

3/4 lb. wire, @ 30c.....	\$0.20
2 round miniature bases, @ 10c....	.20
2 round-base one-point switches, @ 10c .....	.20
2 tungsten battery-lamps, 6 volts, @ 35c .....	.70
4 new dry batteries, 2 1/2 x 6", @ 25c..	1.00
Total	\$2.30

In regard to materials, I think No. 18 annunciator wire is the best and cheapest for the wiring. Round-base one-point switches will answer for their part. Tungsten lamps are expensive in first cost, but will outlast the carbon lamp and give about three times as much light on the same amount of battery power.

As to the upkeep of this handy light, here is my experience: I was able to get four dry batteries that would not spark a gas-engine any longer and connected them to the lamps. They ran the lighting system about six months, when I secured four more and connected them all, as shown at the bottom of the sketch. These eight lasted six months more. Of course it depends upon the quality of the battery. Four new batteries of strong testing ought to last for a year with moderate service. A battery recommended for telephone service or ignition will do best.

From Sheep to Mutton

By J. S. Underwood

THE work of killing and dressing a sheep is a little more difficult than that of dressing a hog, but when the art is thoroughly mastered the operation can be speedily and neatly performed. Sheep that I intend to kill I remove from the rest of the flock from eight to ten hours before slaughtering. I put them in a rather dark close pen without feed, so as to allow the stomach and intestines to become clear. To kill, I put the animal on its side in a V-shaped trough about a foot and a half above the ground. The feet are tied and the animal placed so that its head will extend beyond the end of the trough. I place one hand on the back of the neck and the other under the jaw. Then by a quick motion I break its neck to end all suffering. In this way the animal is not only rendered unconscious but bleeds more completely after it is stuck. As soon as the neck is broken I stick it with a sharp knife just back of the ear, being sure to sever both jugular veins. I cut through to the backbone but exercise care not to sever the gullet, otherwise its contents would come up and spoil the flavor of the meat. Then I start skinning on the hind legs, insert gambrel, and hang up the same as with hogs. I never let the wool touch the meat. I let the knife slip down sideways and keep it clean by frequently dipping it in water. After the skin is pulled down from the hind legs it is "clubbed off" with a short clean stick. In drawing I split the animal down the belly from tail to breastbone, being careful not to cut the entrails. With a sharp knife the hams are divided, and when the carcass is spread open to cool I wash it off by throwing a bucket of clean cold water over it. By pursuing this method the meat is free from the "mutton taste."

If the cream separator is not put up absolutely level, it will be harder to operate, will wear out more quickly and will extract less butterfat from the milk than if level.

An Empire of Feed

WHEN feed was scarce in the Middle West last summer, due to the excessive drought, the Marinette Chamber of Commerce announced that northern Wisconsin had enough feed to take care of all suffering stock, and would take care of them. Of course stockmen in the drought area could not be expected to believe that, for there are too many cases of local "boosting" campaigns inaugurated for publicity's sake by civic bodies who know that they will never be called upon to make their offers good. Our comments called forth the following letter from E. L. Luther, agent in farm management for the University of Wisconsin in co-operation with the United States Department of Agriculture at Rhinelander, Wisconsin, which we are glad to publish.

"It is literally true that northern Wisconsin could have taken care of all of the cattle that Kansas, Nebraska, Iowa, and Illinois could have shipped in this season. The counties touched by the Soo Line and the counties north of these were one endless empire of feed this summer. We had abundant rain. Clover grew wild all over. I saw no end of it right in the brush and along all of the old tote and logging roads. Timothy grew waist high. Every old slough had its bluejoint and redtop.

"In one instance advantage was taken of this pasturage. Some seven hundred sheep, bony and half starved, from the Northwest were unloaded at a little station in this county and driven out into the woods. It did not take them long to look like sheep. One lumberman offered free pasturage to five hundred cows.

"Northern Wisconsin has from thirty to forty-four inches of rainfall as a rule every year. There have been but a couple of dry summers in twenty years, and then nothing like what they had out West this summer."

Dogs Shrink Lambs

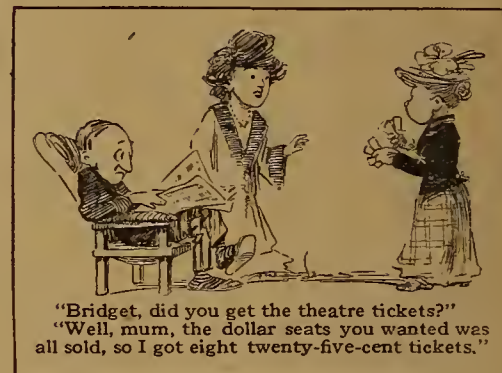
SPEAKING of shrinkage on live stock, there's nothing like a cur to put the shrink in a flock of sheep. In 1908, at the Colorado station, an experiment was tried in this, but quite without intention to do so.

Three lots of lambs were on feed. They were growing finely, putting on from two and a half to nearly eight pounds per head every week. But during the seventh week dogs dug under the fence and worried the lambs in Lots I. and II., but Lot III. was spared.

Note the result: At the end of the sixth week of feeding, the ninety lambs in Lot II. weighed 7,160 pounds. After one night with dogs, though none of them were killed, the worry and fright not only robbed the feeder of all the gain but caused an actual loss in weight of 580 pounds at the end of the eighth week as compared with the end of the sixth. As they had gained 425 pounds the previous two weeks, it is perfectly sure that the dogs caused the loss of a thousand pounds on the ninety lambs.

In Lot I. the loss was at least six hundred pounds on ninety lambs. In neither case was any lamb killed. The shrink was caused by the fright and worry alone. The ninety lambs in Lot III., right alongside, made steady gains while the ones worried and frightened were falling off.

Here are figures speaking in dollars and cents. To the sentimental lovers of all sorts of dogs, perhaps the agony of the lambs—an agony so great as to cause emaciation and weakness—may appeal as against the personal regret one might feel in not getting a new dog when the old one dies.



A Common-Sense Certified-Milk Farm

COMMON-SENSE certified-milk farms are scarce because many such dairies are overcapitalized and philanthropic in their nature. The milk is of an unusually high grade in most cases, but whether it is produced at a profit or a loss is a secondary consideration. Let me tell you something of the history and the present standing of Middlebrook Farm, just outside of Dover, New Hampshire.

When the present manager, Mr. W. D. F. Hayden, took charge of this farm in 1900 it was producing about fifty quarts of milk a day. This milk was not certified. The farm is now producing from seven to eight hundred quarts a day, five hundred of which is certified.

The story of the development of this farm from an ordinary dairy farm to a well-known and profitable certified-milk plant is simple. First a few changes were made in the equipment along the line specified by the inspectors of the Boston Medical Milk Commission which certifies the milk of Middlebrook Farm. The expense of remodeling was not heavy. The interior of the barn and also the bottling-room was covered with large sheets of galvanized steel, the seams laid in white lead. Compared with concrete or plaster, the galvanized steel is smoother and is also non-absorbent, which makes the walls absolutely sanitary and easily cleaned.

The animals of the herd have been selected so that the milk is especially good for baby feeding with respect to the number and size of the fat globules. The herd is composed of fifty Holstein cows and thirty Jerseys, and the milk averages the desired four per cent. of butterfat. It also contains about right proportions of large, medium-sized, and small fat globules.

The cows are bedded in sawdust and shavings, which contain less dust than straw.

Particular care is taken in the transfer of the milk from the stable to the bottling-room. The milkers themselves never enter the bottling-room, but pour the milk from their pails into a funnel, the end of which is horizontal and passes through the partition between the stable and the bottling-room. As the hole is but an inch and a half in diameter, the isolation of the bottling-room is practically perfect.

The Boston Medical Milk Commission requires that certified milk contain not more than ten thousand bacteria per cubic centimeter. The average number of bacteria found in the milk of Middlebrook Farm is about thirty-five hundred bacteria per cubic centimeter. The samples are taken by inspectors from the wagons while the milk is being delivered. Only rarely has the standard been exceeded, and in many cases it has been less than two thousand per cubic centimeter, or about one fifth as much as allowed.



The Secret of Making Profit out of Stock

GILBERT HESS, Dr. of Veterinary Science Dr. of Medicine

I want all you farmers to get this fact riveted in your mind regarding stock—that the only animals that are paying you a profit are those that are digesting their feed—bowels regular every day and absolutely free from worms.

And it is just at this very time of year when stock are not in that condition, because they are cooped up, deprived of exercise and for the last few months have been on dry feed, which does not contain the laxatives and tonics so abundantly supplied by grass.

Dr. Hess Stock Tonic

Aids Digestion Makes Stock Healthy Expels Worms

Being both a Doctor of Medicine and a Doctor of Veterinary Science I formulated Dr. Hess Stock Tonic to aid digestion, make stock healthy and expel worms.

This scientific, 21-year-old preparation contains highly concentrated tonics that improve the appetite and aid digestion, laxatives for regulating the bowels and vermifuges that expel the worms.

Remember, it's the cow in the pink of condition that fills the milk pail, the steer with an appetite that lays on fat, the horse that enjoys its dinner that pulls on the bit, the hog that is healthy and free from worms that gets to be a 200-pounder in six months.

Dr. Hess Stock Tonic will positively put your stock in these conditions. So sure am I that it will, that I have authorized your local dealer to supply you with enough for all your stock and if it does not do as I claim, return the empty packages and get your money back.

Dr. Hess Stock Tonic is never sold by peddlers—only by reliable dealers whom you know. I save you peddler's salary and wagon and team expenses, as these prices prove: 25-lb. pail \$1.60; 100-lb. sack \$5.00. Smaller packages as low as 50c, except in Canada, the far West and the South.

If not sold by your dealer, write direct to

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid tonic that tones up the dormant egg organs and keeps the hens scratching and happy and laying all through the winter. Shortens moulting period and promotes rapid feather growth. Nothing better to make chicks strong and healthy. Cheap—a penny's worth is enough to feed 50 fowl per day. Sold only by dealers whom you know. Never sold by peddlers. 1 1/2 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the far West. Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sitting-top cans, 1 lb. 25c, 3 lbs. 60c. Except in Canada and the far West. I guarantee it.

Middlebrook Farm has been scored by representatives of the Boston Board of Health, and the score has never been less than ninety-eight per cent. perfect.

When questioned concerning the reason for the small amount of contamination in the milk, Mr. Hayden stated that the milk was safeguarded at every step in the process of producing, bottling, and marketing it. Prevention of contamination rather than correction is the basis on which the milk is produced. "Counting the cost of inspection and various other running expenses," said Mr. Hayden, "at least three hundred quarts a day should be produced in order to make a certified-milk farm profitable. The certified milk produced on the farm is sold in Boston through dealers, and to the summer resorts along the North Atlantic coast. The remainder of the milk which is not certified is sold in Dover, where it brings ten cents a quart, though competing milk from other dairies can be bought for seven cents in summer and eight cents in the winter."

Silos Certainly Pay

Middlebrook Farm has three silos, two of which are staves and the third of concrete-block construction. The concrete-block silo is sixteen by thirty-two feet in dimensions and cost five hundred dollars.

Milking machines were tried out for a year, but the production per cow declined for reasons which baffled both Mr. Hayden and the milkers and also the experts of the milking-machine company. All of the cows are now hand milked. The unsatisfactory test with the milking machines, however, occurred five years ago, before the machines were in their present state of perfection.

The help employed is chiefly young men of the better class, and they are paid well. Though the help problem in New England is a serious one on most farms, Mr. Hayden has experienced no difficulty in obtaining and keeping his help.

His success has been due largely to the systematic manner in which the work is conducted, and also to the educational and commercial training afforded by such a farm.

Where Pure-Breds Pay

By Earle W. Gage

THE fact of the matter is that many of us are afraid of the pure breed of hogs. Here is the way we are apt to look at the matter. The packers will pay just as much for one hog as another, provided he has the weight.

That is a fact, but there is better money, all things considered, in the pure breed of hogs if bred, as most are, for vigor, vitality, and prolificacy.

Within a year the University of Nevada priced a pure-bred sow safe in pig to a would-be buyer for \$150. The price seemed bigger than a mountain to the average of the State farmers, and the sale

ishing feed than she ordinarily would, and to try to stint her allowance because of the cost will invariably react on the foal. It is better to keep her well-fed, well-groomed, exercised, and in good temper. Then the foal will come into the world not hungry and ill-nourished or ill-tempered, but well-born, as it should be.

It is quite true that a pregnant mare should receive adequate supplies of feed, and if such supplies are withheld the colt will be unlikely to develop perfectly and so will come into the world small, puny, and weak. Arriving in this condition it will have to be well nourished in some way or another, else it will be likely to remain stunted for life.

It is incorrect, however, to state that the foal will come into the world possessed of a gluttonous appetite, or inordinately hungry, by reason of the semi-starvation it has experienced before it was born. Indeed, appetite may be woefully lacking on account of the weak condition of the foal. The stronger a foal is at birth the hungrier it is likely to be, because it is healthy, rugged, and active. It is also a fact that a foal born of a well-fed or an underfed mother may develop a gluttonous appetite and become abnormally hungry for causes altogether apart from heredity. Such causes, for example, would be deficiency in the milk supply of the mother, or effects of worms, which frequently invade the intestinal tract of a young colt.

It Pays to Feed Well

We agree with our correspondent that the pregnant mare should be adequately fed, but not for the reasons he advances. The pregnant mare requires first of all the "feed of maintenance," by which term is meant the amount of feed necessary to keep the mare in good bodily condition, neither gaining nor losing in weight, and apart from the requirements of her body occasioned by work, exposure to cold, and the presence of an unborn fetus. In addition to this supply of food the mare, to do well, must have an added amount of food if she is made to do work, for work means waste of tissue, and waste necessitates food consumption for repair. If the mare is pregnant she requires still further sustenance for the building up of her embryo foal.

If the mare is insufficiently fed she must either starve herself, perform unprofitable labor, or starve her unborn fetus. If she he half-starved the fetus may die from lack of nutrition and he expelled as a so-called abortion. If she is fairly well but insufficiently fed, she will be thin herself, her foal but partially nourished, and consequently weak and small at birth. For profitable production of horses it always pays to feed properly and well. The pregnant mare, whether worked or kept in idleness, should be so fed as to keep her in good bodily condition, with a surplus supply of nutrient matters for the perfect nourishment of her fetus.



He sold the first litter of pure-bred pigs for \$110

was not made. The litter of pigs the sow was carrying at the time she was priced was later sold at under six months of age for an aggregate of \$215.

An office man, formerly living in the city, who went into the country to regain his health, and having a great desire to go into pure-bred stock in all lines, walked into the office of one of the state colleges of agriculture and wanted to buy a pure-bred pig for his five-acre ranch. He was supplied with a young sow for \$25. His neighbors threw up their hands—that deal was the talk of the town for the coming weeks. The sow's first litter brought this man \$110, while the second litter sold at about one hundred dollars.

Mistaken Ideas on Heredity

By Dr. A. S. Alexander

HERE is a discussion which recently came to my notice that expresses popular but mistaken ideas on the subject of heredity. It was written by a horseman:

Some farmers fail to understand that the physical state and temper of a mare before the birth of her colt mold the nature of the animal. I have known mares kept in a hungry condition for months prior to the event, and the colt came into the world with a ravenous appetite, became an enormous eater, and was consequently a costly horse to keep.

A pregnant mare needs more and nour-

Gluttonous appetite sometimes is seen in both adult sires and dams. Such animals mated might transmit a like tendency of gluttonous appetite to their offspring. Gluttonous appetite is present in a majority of horses afflicted with heaves, and it is believed that this appetite is transmissible, and that the animal to which it is transmitted will be likely to contract heaves when exposed to the influences which tend to bring about that disease.

A Bad Temper Not Hereditary

In adult horses a gluttonous appetite may also be acquired as the result of improper feeding, poor quality of feed, irregular feeding, intestinal worms, and other ailments. It is not known that gluttonous appetite of this sort necessarily makes the animal subject to heaves. If the mare is well nourished the foal will receive adequate nourishment, provided the mare is well and her organs normal in condition and performance of their functions. Kindly care, due exercise, proper shelter, adequate ventilation, fresh air, sunlight, and grooming all contribute to the comfort and health of the pregnant mare, and so benefit the unborn foal indirectly. But unless she naturally possesses a bad temper, any bad temper she will show on account of the harsh treatment will not be transmitted. Influences of surroundings are not immediately transmitted as fixed traits or peculiarities.

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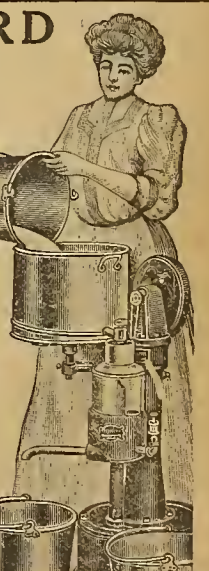
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Crops and Soils

Getting Out of a Tight Place

By W. M. Johnson

THE neighbors shook their heads wisely, as neighbors often do, and said it was no use. In another year or two the mortgage would be foreclosed and Brown's property would go at sheriff's sale. They were sorry for him, of course. He was a hard-working, quiet chap, whose advice was always worth considering and whose judgment was usually good. He had grown good crops and poor ones, as they

had. When hot winds and rainless skies turned the stunted grain yellow too soon, or when too much rain worked almost equal disaster, Brown had always borne his losses philosophically. A real optimist with a shrewd, level head, he would say, "Well, I s'pose it can't be helped. We might as well take it with a grin as with a frown," and say it in such a way that the listener felt for the time at least as though the thing were not so bad.

So, of course, the neighbors sympathized with Brown. "Too bad," they said, "always a good worker," and then they shook their heads again.

How did Brown feel about it? Well his optimism never deserted him. But a shade of anxiety crept into his smile. He was measuring his situation—seeing the almost hopelessness of it as his neighbors did, but thinking, thinking, to find a way out.

It wasn't much of a farm he had then for the years of work it represented. The house was good, but the stables were of unhewn logs and crude design, the soil was worn and weedy, and the fences in sad need of repair. He had gone in debt for the farm, and somehow the type of farming he followed didn't seem to pay debts, or even keep them from increasing. He had grown grain year after year to sell, and his farm was not large enough to leave a very wide margin of profit even when crops were good. Sometimes they were poor, then the interest on the mortgage was added to the principal. The loss of a couple of valuable horses and some other expenses had eaten hungrily at the profits. It was an indigo-hued situation.

But there was some of the stuff in Brown's quiet, smiling nature that is not easily whipped. He wasn't going to lose; he would win out yet!

An able economist might have found a way out sooner—perhaps by methods more efficient. An agricultural education would have been a valuable asset. But Brown was not the one and had not the other. His sole equipment was sterling good sense and native business ability. He knew farming in a practical way. Knew it so well as to realize that he yet had much to learn. He knew that the old way of farming must yield to something different. The golden bounty that had sprung from his virgin furrows as if by magic was a thing of the past. But the fighting instinct within him said that it must be a thing of the future too. He would make those weary furrows young again.

Study He Must, or Lose!

He read the best agricultural papers. He studied keenly what his neighbors were doing, and finally evolved a plan that, win or lose, must be his last play on the old farm where in years of plenty and years of failure he had toiled and planned.

One of his smaller fields had taught him the secret of good farming. A few years before the soil was depleted to a point where even in the best years it would no longer grow a crop worth harvesting. To get clover on it was impossible.

At that stage of affairs he put all the manure from his stock—ten cows and the work team—on the field and planted corn. The crop was fairly good. The grain following was a decided improvement over previous crops. Then he had again manured the field heavily and had got a fine crop of corn. This year the grain on that field promised an unusually large yield, and the clover-seeding, where so many previous seedings had failed, was as good as the best anywhere around.

The thing that succeeded on four acres ought to succeed on eighty. Why not? Brown decided that it must. So cows, manure and clover took possession of his thoughts. They would restore fertility to his furrows and clear away his financial clouds.

His cows must make more money. He could not afford blooded stock just yet, but if better fed and kept his present stock would make more money, and if fed cheaply more of that money would be profit. He must have a silo.

So Brown borrowed more money on the old farm. It was not easy to do so, but he found a man who believed in him and who would assume the risk if the money went for improvements. Not a cent of it went for anything else, nor could it have been expended more wisely.

Money Was Deposited in the Silo

The silo was built and with it a big barn. The poorest cows were sold and the others bred to good sires. Some good calves were purchased and a few acres of bush land cleared for the plow.

Then Brown showed how far into the future his plans were laid. Ten acres of land were planted to a cherry-orchard. Perhaps that of all was his wisest move.

The change came as in the nature of such things it must. But relief did not come in one year, nor in two. It was a hard, uphill way—harder perhaps than before. There was more interest to pay, a bigger plan to handle. But the man was big enough to meet the emergency. Gradually the brighter side came out. The cows responded to the better feeding, and the cream check grew to be of real importance—big enough to pay the hired help and store bill besides.

Beans, potatoes and other cash crops were grown on land made productive by the increased amount of manure. And after these crops clover flourished. The clover-sod in turn grew profitable crops of grain. The soil with some of the humus restored to it that years of grain-growing had removed was less injuriously affected by either dry weather or excessive wet.

Now cultivated crops have cleaned the fields of weeds, and from one end of the farm to the other there is no corner that does not speak well of the newer way of farming. If this were fiction the mortgage would all be paid, there would be money in the bank and a "six-cylinder" occupying a garage where the old buggy-shed stood. But it's a story of a real man and the man's game he has played and is playing. Even if the time were a few years later those things might be truthfully written. But it is only four years ago that the new order of things went into effect. Yet in that time there has been sufficient change for the better from which to prophesy the man's success. He pays his interest easily now and has something left for improvements.

It's a fine success in the making—so far made that the neighbors do not shake their heads any more, but say instead in hearty tones of assurance, "Yes, Brown's going to come out all right."

A Double-Row Drag

By Margaret Statham

MY HUSBAND, during the dry weather, made a drag, to use in his cornfield, out of two old mower wheels and an old cultivator axle. The wheels lie flat upon the ground. A board is fastened across each one, and the axle ends fastened each to a board in an upright position. This allows the corn to pass beneath. It works two rows at a time.

THE United States consul in Germany reports the use of peanut bran, which is made from the shells of peanuts and the red skin which envelops the kernel. The finest grades of peanut bran are worth in American money about \$11.00 a ton, and the coarser grades about \$9.52 per ton. Peanut bran is said to contain an average of about thirteen per cent. of fatty constituents.

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ing value closely equal to alfalfa. Prof. R. C. Potts of that station says that the dairy-cattle feeder will find that where alfalfa cannot be successfully grown and cowpeas can, the latter will be his best feed as a roughage. Bermuda hay, in his experiments, was less palatable for dairy cows than prairie hay. Cows fed on Bermuda hay produced about a tenth less milk than those fed on prairie hay.

What Terraces Will Do for Steep Lands



THIS shows a terraced hillside on a small farm in Georgia. It was planted in cotton this year; was just thinned when the picture was made. The hill is very steep, but the land is level between terraces. The hillside is in a high state of cultivation and will make a bale of cotton or fifty bushels of corn, and has once made thirty bushels of wheat per acre, which is far above the average for this country. The land has been terraced in this manner for fifteen years, and the owner has plowed with reversible disk plow, which has resulted in the level condition between terraces. The picture shows how the owner held the land together.

E. C. STEPHENS.

it are exorbitant. The supply is small, but the average farmer is not justified in paying more than a dollar or a dollar and a half a pound for the seed except in very small quantities, to be used in getting a start in producing his own seed. The grass is of very high value, especially in the drier regions of the United States, where it promises to become a staple hay crop. It seems to be of great promise also in the humid regions as a single-season forage crop.

What Are the Legumes?

PROBABLY there are very few of us who do not know what a legume is, but many of us might be at a loss to tell whether or not some particular plant falls under that head. Here is a list of the important legumes, as given by the U. S. D. A.:

Red clover, alfalfa, cowpeas, alsike clover, crimson clover, white clover, soy beans, peanuts, Canada peas, hairy vetch, common vetch, velvet beans, Japan clover, sweet clover, bur clover, and beggar weed.

This list of sixteen leaves out some which are not very important as field crops. The Department publishes this statement, which is worth while for all of us to memorize:

Among various causes which have led to the abandonment of lands once cultivated, there is no doubt that the greatest single cause is the failure to utilize legume crops.

This failure is almost certain to take place in a one-crop country. A one-crop country is a one-generation country.

Potatoes in the Rotation

By John E. Taylor

SOMETIMES the best results on a farm are obtained by accident. It happened to be the case on a Maine farm in raising oats, but since this accident the farmer has been able to get a much larger yield of oats than ever before.

This man had an old field, considered "run out," which was of sandy loam. It had for many years been without a hay crop to speak of. About three years ago, in the fall of the year, he plowed the piece, containing about five acres, and the following spring he planted all but an acre of it in potatoes. He used a half ton of high-grade fertilizer to the acre and that fall received about two hundred and fifty bushels of potatoes to the acre. The following spring he plowed the ground again and sowed it in oats without using any more fertilizer. He seeded the piece down at the same time



The "proof of the pudding"

and that fall received a crop of oats that yielded seventy bushels to the acre. He used about four bushels of oats to the acre.

Proof that the potatoes benefited the piece was found in the acre that he did not put into potatoes. He planted this, the year that he put in his potatoes, in corn, but when he sowed his oats he sowed the acre in oats also. He used the same amount of fertilizer on the corn as he had on the potatoes. The oats on the corn part yielded a little more than forty-five bushels to the acre. This man is now convinced that at least on sandy loam and ground that has not been plowed for several years potatoes make a fine crop to precede an oat crop and seeding down.

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The Market Outlook

Playing the Safe Game

By W. S. A. Smith

IN THIS day of high-priced feeders, high-priced corn, and erratic markets the man handling cattle has considerable difficulty in figuring profits. There are some things, however, worth thinking over, little lessons in the past year's work worth remembering. Last spring we had lots of rain, and my feed yards on one farm were in a dreadful state—manure a foot deep and not a dry spot for the cattle to lie down on, and of course a small gain on the cattle as long as these conditions lasted.

A change was necessary, so part of the feed lot has been paved with cement, but on thinking the matter over further I came to the conclusion there was no necessity to keep a large number of cattle confined in a small feed lot for from six to eight months and have the spring rains wash away fifty per cent. of the fertility from the manure. So I had one hundred and sixty acres fenced hog and sheep tight. It cost around two hundred and fifty dollars to fence one hundred and sixty acres. So that figured on an interest basis even at twelve per cent., the question was, Could I make the fence pay the interest, amounting to thirty dollars yearly? Two hundred and fifty two-year-old steers and two hundred and forty hogs have now been fed fodder on fifteen acres for six weeks, and will now be moved onto another part.

These cattle are fed their grain and oatmeal in the feed yards from 7 to 8 A. M., then turned out to work on corn fodder until 5 P. M. So that I already have fifteen acres manured, and will have thirty more by spring. Sixty-seven lambs turned loose, from the waste alone sold for one hundred and twenty dollars more than they cost. Twenty old brood sows have lived on the alfalfa and around the alfalfa stacks since September. Two hundred and forty pigs, now averaging one hundred and thirty pounds, ran on alfalfa all summer, hogged down ten acres of corn this fall, and have been running all over the one hundred and sixty acres cleaning up the corn knocked off by the corn cutter when filling the silo.

We now have at present about thirty-three thousand pounds of pork on this farm, and at least one half of this has been made from the alfalfa and waste on one hundred and sixty acres—waste which could not have been utilized if the place had not been hog-tight.

Did the fence pay interest well? Just figure on it a little.

Just as long as I am able to produce pork, beef, or mutton from the waste on the farm, such as corn fodder and gleanings, and at the same time increase the production, with little or no expense, through a fence which costs me thirty dollars a year, I feel I am playing a pretty safe game.

How Much Water in an Inch of Rain?

AN INCH of rainfall is equivalent of 603 barrels of 45 gallons each, to the acre. This amount of water weighs over one hundred and thirteen tons. Think of hauling it to the farms in wagons holding a ton each. That seemingly light air and clouds are capable of handling this enormous amount of water is one of the marvels of meteorology. One inch of rain is not such a heavy rainfall either.

IN SOME Canadian creameries the cream is graded and two cents more a pound is paid for butterfat in No. 1 cream than for No. 2. The best grade is clean and fresh in taste, and must test above thirty-five per cent. butterfat. All other cream is No. 2.

THE American consul at Hongkong, China, reports an oversupply of rice in the East, with prices about half what they were a year and a half ago, and thirty per cent. less than a year ago.

The Holiday Hogs

By L. K. Brown

WITH the coming of the holiday season the hog market has taken its stride for its early winter run. While there have been many small fluctuations it has remained within the \$7.50 to \$8 range most of the time. Whenever the lower mentioned figure has been neared, packers have been liberal buyers until this has forced the prices up, and then lighter buying has been their program.

Stability has been given the market from several sources beside that of the desire of the big packers to lay by their winter stocks. Eastern shippers have been steady buyers of goodly numbers, the small independent packers have been operating to their capacity and so taken a good slice. Demand for fresh pork has been insistent and strong. This means an active, even

market. During the holidays, however, there is always a lull in the demand as soon as poultry becomes the temporary substitute.

Quality has gradually improved, but there are still many of the 140 to 175 pound sort. A drop in the price of corn would be apt to cause many feeders to feed these shotes out to a heavier weight, and thus benefit the market for the present by causing lighter receipts, but the relative proportions of the feeding operations of all kinds of stock and the supply of corn would not seem to indicate much of a decline in the corn market. The proposition to the feeder has remained about the same—a small profit on the medium weights, and little or none on the light weights.

Plans for a Better U.S.D.A.

IF ALL of the plans outlined by Secretary Houston in his annual report, just issued, work out as well as they have been laid out, the U. S. D. A. will make every farmer a thorough expert in all lines of his work.

Secretary Houston has recommended that the Congressional seed distribution as now conducted be discontinued, and that a method for securing valuable seeds and plants be instituted. The Weather Bureau has been reorganized so that the same or better work can be done for less money. Particular attention will be given to flood warnings during the coming year. Arrangements have been made with the Post Office Department to aid in crop-reporting, the rural carriers assisting in this work.

The Office of Marketing is working upon the problem of establishing grading standards for various farm products so that the consumer when buying a so-called standard package will receive standard quality. Under conditions of the past most grading has been done by commission merchants.

The Department of Agriculture is also about to take up experiments with labor-saving devices and methods calculated to help the farm woman.



Provide Against Difficulties

By J. P. Ross

NO SIGNS of impending change are visible just now in the sheep market. Early last month the usual tendency toward higher prices during the holidays developed, but not to any great degree, and, since lambs have been doing remarkably well in the cornfields, and are coming into market as fat as is desirable for killing, and selling up to \$8—any considerable rise in prices need not be looked for. Older sheep of all kinds, too, are readily taken at good prices; wethers from \$5 to \$5.50; prime yearlings from \$6.25 to \$7; good yearling ewes, \$6.30 to \$6.50; old ewes, \$4.25 to \$4.75. The finished condition of most of these caused them to be quickly absorbed for killing, so that the demand for feeders, which continues to be quite lively, has had, in many cases, to remain unsatisfied.

At the beginning of this new year I feel happy in being able to say to any readers of FARM AND FIRESIDE who may have been encouraged in their sheep ventures by something they have met with in these columns, that I fully believe that, despite tariff changes, droughts, floods, dogs, and all of the other evils to which the wanderers of the "golden hoof" are liable, the prospects of the shepherd have never been brighter than they are at this opening of the year 1914.

The steady way in which fairly remunerative prices have for a long time been maintained for all classes of sheep will, it is to be hoped, tend to lead many farmers who have hitherto kept aloof from the sheepfold to enter it and "try their luck." To them especially, if they propose to commence with a breeding flock—which for many reasons is the best way—I would suggest that good luck follows closely on good management.

Right now is the time to provide against possible troubles by, in the first place, making a careful examination of every member of the flock, to see that a very common error has not been made—that of overfeeding during the month or so immediately preceding the time of expected lambing. The competent shepherd will rather see his ewes somewhat low in condition, for he can remedy that if taken in time, while it is almost impossible to get a lot of fat off without injury to the ewe's vital powers just when they should be at their best.

The happy medium between the two conditions is not hard to attain, the trouble

is to know when the ewes are just right, and to keep them so up to their time of lambing, and, as this is a matter requiring some experience, it will be well for the man who lacks it to avail himself of the help of some more experienced neighbor.

The present promise of an open winter leads one to reflect that the longer the pregnant ewes can be kept out of doors, the better are the chances of a successful lambing time, for fresh air and exercise are potent helpers to insure it. Even when the pastures are unusually luxuriant they will need a light ration, daily, of dry food; for which purpose there is nothing better than one-half pound of ground or whole oats, one-half pound of bran, and one-fourth pound of linseed or decorticated cotton cake.

This, with from one to two pounds of clover, alfalfa, or meadow hay, changing from one to the other to give variety, should prove sufficient to insure good condition to the ewes; but judgment must be used to determine whether to increase or diminish the ration. In England, where the oat and barley straw is carefully preserved, it is generally used either alone or mixed with the hay, as being not only economical, but as less liable to produce undesirable fat than hay given alone.

Advertise to Sell

By John Y. Beaty

SOME folks seem to advertise their live stock just to let folks know what kind and breed they have. When I advertise, it is because I have something to sell, and I expect to sell it more quickly and cheaply by advertising than in any other way.

An advertisement must be a news item. If you don't tell something new in the first line the ad won't attract much attention. Usually the most important news is the fact that you have something for sale. "Heavy Shropshire Rams at Auction" is a news line. The rest of the story can be told after that to interested prospects.

The name of your farm, the name of the breed, or your own name, is not sufficiently attractive to buyers unless you happen to have been in the business a long time. Even then the new man is not attracted by your name nearly so much as by the news line.

When you have the buyer's attention you must convince him that your flock is the one from which he should buy. Usually the man who reads your ad is ready to buy—he is trying to decide where. If your ad makes him believe that your farm is the place he will probably look no farther.

The argument you put up will depend somewhat on the breed you are offering. You should mention the points of most interest to men buying that breed. If it is a mutton breed something of the mutton qualities of your flock, not of the breed, will be good arguments. If it is a fine woolled breed something of the wool-clip of your flock, not of representative animals of the breed, will help the prospect decide in your favor.

Here is an ad that has no news in it at all. You can't even tell whether the advertiser has anything for sale or not.

VALLEY VIEW DORSETS

Herd descended largely from the best flocks in England. Present breeding rams are from the well-known Flowers flock. The best breed for the production of early lambs.

Compare this with the following ad:

DO YOU WANT A GOOD SHROPSHIRE RAM?

If so, buy now while you can get the choice. Yearlings sired by an extra good imported Cooper ram, and out of good imported and home-bred ewes, at \$18 to \$35 each.

The first line tells you that here is a place to buy Shropshire rams. The next line tells that there are a number for sale and you can have first choice if you buy at once. Then you learn that the rams are well bred and, lastly, you learn the price. There is a difference of opinion as to the wisdom of putting the price in an advertisement, but often the buyer is influenced almost entirely by the price. If he didn't know the price he would hesitate about writing. Above all things, don't fail to make your sheep advertisement a news item.

IN SASKATCHEWAN, CANADA, most of the creameries are co-operative and are operated by the government. The government furnishes the money, pays for the cream, makes the butter, sells it and deducts from the returns only the actual cost of the operation.

Parcel-Post Rate Reduced

BEGINNING January 1, 1914, parcel-post rates were reduced in the third, fourth, fifth, and sixth zones; and the weight limit was raised in the first and second zones from twenty to fifty pounds. The maximum weight of packages to all zones beyond the second was increased from eleven to twenty pounds.

Other less sweeping changes also took effect January 1st, all of which were in the direction of a reduction in rates.

Garden and Orchard

Sweet-Potato Precautions

NO CROP is more apt to be diseased than sweet potatoes. Black rot, stem rot, and foot rot cost growers ten million dollars a year, according to the United States Department of Agriculture, which has just sent out some very useful hints for people who are saving seed sweet potatoes or starting plants in the hotbed.

All these diseases can be successfully fought, and should be.

Every hill from which seed is saved should be examined by splitting the stem just above the potatoes, and examining it for the black discoloration which means disease. No seed should be saved from a hill which is not sound.

The diseases are apt to be in both seed and soil. If the seed is sound—and that cannot be told except by examination of the plants when seed is saved—the next step is to disinfest the hotbed and the soil in it. The seed should be kept separate from the main stock, in crates or baskets. The best time to disinfest the seed is in the fall. Soak the seed in a solution of one part of corrosive sublimate and one thousand parts of water, for from five to twenty minutes, rinse, dry, and store.

Take all the soil out of the hotbed, clean it, and spray with a solution of five pounds of copper sulphate and fifty gallons of water. Then whitewash the inside thoroughly or spray with Bordeaux mixture.

Put the soil for the hotbed in a tight box, and soak it in a solution of one pint of formaldehyde and twenty-four gallons of water. Don't use the soil for two weeks after the formaldehyde treatment, nor until the formaldehyde is all evaporated. The stirring of the soil occasionally will aid evaporation.

Wagon boxes, shovels, and every tool used in handling the hotbed soil should be disinfested with the formaldehyde.

All this trouble ought to free the crop from the disease, but it may not. The soil of the fields may be infected. But if there has been no crop of sweet potatoes on the ground for three or four years, not much trouble ought to be encountered. All sweet-potato tops and rejected sweet potatoes should be burned every year, and the product used for stock should be cooked. The judgment of the grower will teach him what to do when he bears in mind the fact that these diseases are in the potatoes, the tops, and the soil, and that the germs are distributed by the wind from field to field. It may be too late this year to examine the hills while saving seed, but these precautions will be well worth while anyhow, and the proper saving of seed may be looked to next year. If seed potatoes are bought from reputable dealers they should be free from disease, and the grower may start with the subsequent treatment now, with every prospect of success—and the only thing worth while is success.

One Way to Betterment

JUST an ordinary farm lane! But it is made more useful and more beautiful by the trees along its sides. In this case pear and cherry trees do the trick. Careful se-



lection of trees that can be made useful as well as ornamental will add—well, there is scarcely a phase of farm life that will not be in some way benefited.

What Can We Do for This Woman?

THE battles on a farm are to a large extent individual, and have to be fought out along lines different from those of every other farm. That's what makes it so difficult to give specific answers to questions such as this California woman presents in the following letter:

I have been a reader of FARM AND FIRESIDE for eighteen years, but have never tried to make my entire living off a farm, or ranch (as most people call it out here), until this year.

We have kept a few chickens, a cow, and a horse, and raised our own vegetables, just enough to help out.

I rented a place this past spring. There are twenty acres of hay land, about the same of pasture, one acre of garden that can be irrigated, and an eight-acre field that I planted in corn, beans, and potatoes. The potatoes did not turn out well; they

had brown streaks all through them, and half of them were not fit to eat. The land is poor, and is wet in winter. When I started I had six cows, seventy-five hens, and two small horses. I have bought five pigs, two sows, and a male that I want to keep, and have fenced a three-acre oak grove for them. Am raising four calves, three of them heifers, and have seventy-five pullets five months old, and 80 broilers about ready to sell as I write. In the meantime I have gone in debt \$100 for feed this summer and fall. Three cows are dry now, but will be fresh by the last of November.

Can any of the FARM AND FIRESIDE readers tell how they can manage and come out ahead? We moved late this year, but I thought I could come out even.

The owner will put in the hay crop, and take his rent and pay out of the hay; the rest of the farming we will have to do ourselves. I have a good market for butter and eggs. I could sell green peas, string beans, shell beans, and tomatoes to my grocer, but the land is too poor and sour wherever I have tested it. Would it pay to hire a man to haul lime ashes from an old lime kiln five miles away to put on some of the land?

I could increase the size of my chicken yard without using any of the land now in cultivation. My present yard is 50x150 feet. How many hens could I keep in it? I let them out for a run in the afternoon. Wild animals are plentiful here, so the hens have to be yarded.

I have plenty of pasture in the spring, but everything is dry about the first of July. Neighbors say I can't raise alfalfa because the summers are too dry. I planted a little winter vetch in the garden, and it did fine; am saving all the seed from it.

I feel that we must make good. We can have the place for five years or longer. I would be very thankful for any advice.

Club Root in Cabbage

THIS disease manifests itself in a yellowish, withered appearance of the heads. The cabbage is not marketable. The roots are enlarged or out of shape, and do not nourish the plant. It is caused by a slime mold which gets into the plant through the roots. The New York Station gives the following rules for fighting the trouble:

In order to control this disease it is necessary to lime the land heavily in advance of planting. Land to be used for cabbages next year should be limed this fall with one and one-half to two tons of quicklime per acre. The best results are obtained when the liming is done eighteen months in advance of planting. Ground limestone or air-slaked lime may then be used.

It is especially necessary to keep the seed bed free from the parasite. Plants from infested soil should never be set.

In keeping the farm free from this parasite the following suggestions should be observed:

Destroy affected roots as far as possible. Boil affected roots before feeding them to stock.

Avoid applications of manure in the fall preceding a crop of cabbages.

Avoid transfers of infested soil.

Drain the land thoroughly.

Cultivate clean, destroying all cruciferous weeds.

Rotate crops.

Set healthy plants.

Apply lime to soil as indicated above.

These directions tell us to "destroy all cruciferous weeds." By this is meant all weeds and plants belonging to the cabbage family, for they are all subject to the same ailment. Among these are cauliflower, turnips, radishes, rutabagas, all the mustard family, charlock, and shepherd's purse rape. Probably a good rule is to destroy all weeds—and a weed is a plant out of place.

THERE'S no royal road to Easy Street, for each foot of the way means that you've earned the right to go a step farther.

Forestalling Spread of Blight

By Ray M. Young

WHEN you get ready to clear your orchard of pear and apple blight, also known to many as fire blight, mix a strong antiseptic solution of carbolic acid and water and sterilize your tools thoroughly after each cut, as blight bacteria are very easily carried on your pruning tools from an infected cut to a healthy tree.

I usually carry my sterilizing liquid in a small bucket so I can dip my shears in the antiseptic and use a small swab to sterilize my saw. In that way there is no unnecessary waste of antiseptic.

All cuts over three-quarters inch in diameter are best painted with orange shellac. Better yet, melt a pound of grafting wax, stirring in enough linseed oil to make it the proper consistency to apply with a paint brush. The wax preparation is the cheapest and in my experience has proved to be the best. This painting eliminates further infection through the wound.

It is well to allow from twelve to eighteen inches of good wood between the blight and your cut, as in many instances the limb is infected, though not visibly.

It is well not to force too much wood growth, as the tender shoots are more susceptible to blight than old wood.

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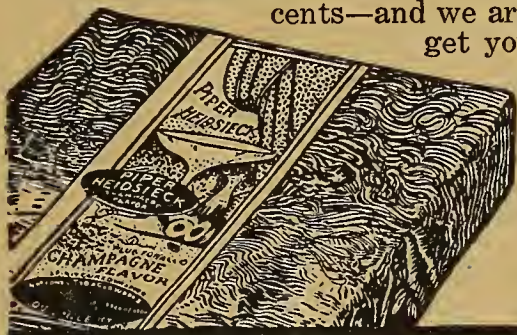
Send 10 cents and we will send a full-size 10c cut of "PIPER" and this handsome leather pouch FREE.

The tobacco, the pouch and mailing expenses will cost us 20 cents—and we are glad to spend the money to get you to try "PIPER" just once.

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Extra heavy
steel disks
forged
sharp



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Cutaway
CLARK'S

BUSH AND BOG PLOW on the job. You will be astonished at what this big, strong, heavy plow or disk will do to it. Let us tell you more about this tool. Write today for catalog and B. & B. circular. CUTAWAY HARROW CO., 854 Main St., Higganum, Conn. Makers of the original CLARK double action harrows

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Northern grown and of strongest vitality. We can furnish grass mixture suitable for any soils.

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Then write to us to-day and say that you wish to earn this fine lot of cards. Address FARM AND FIRESIDE, Post-Card Dept., SPRINGFIELD, OHIO

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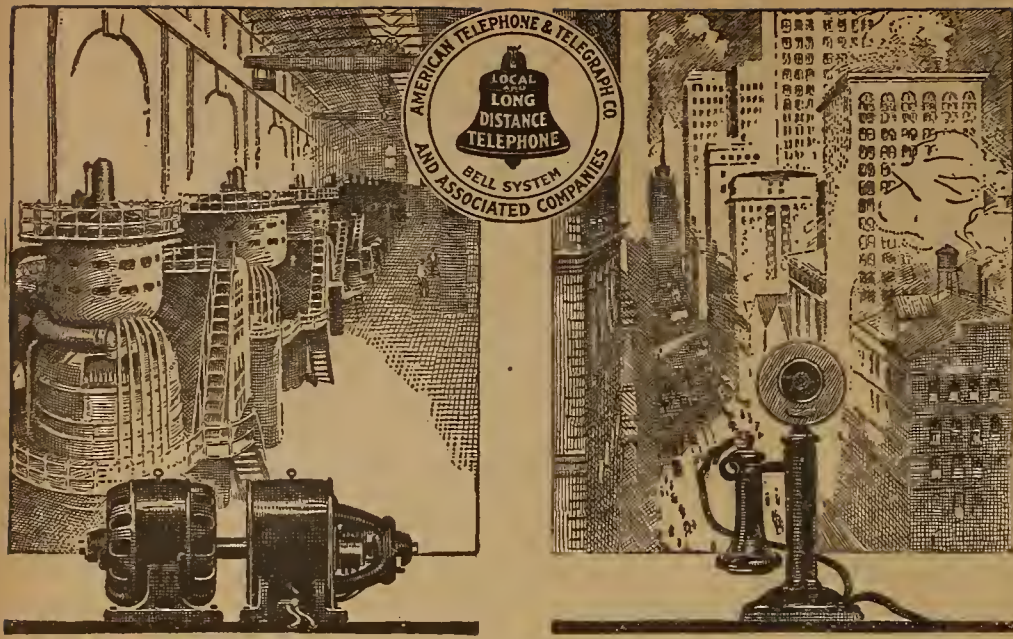
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This exciter by its electric impulse through all

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United for universal service, Bell Telephones give maximum efficiency to the big generators of production and commerce.

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AND ASSOCIATED COMPANIES

One Policy One System Universal Service



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609 FARGO ST., BATAVIA, ILL.
MAKE GOOD
Corn Huskers, Silo Fillers, Gas Engines,
Grinders, Manure Spreaders, Feed
Cutters and Wind Mills.
Send today for booklet giving full information regarding
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TEN STYLES OF
CORD-WOOD
POLE, DRAG
AND LOG
(Portable with
Appleton Gasoline
Engine)

SAWS

\$100
Puts It On Your
Farm



THE CHATHAM
Grain Grader and Cleaner

Handles 70 kinds of Seed Grain and Grass Seed
From Wheat, it takes Wild Oats, Tame
Oats, Cockle, Rye and Smut.
Cleans the dirtiest Flax. Has special
knocker and skimmer which prevents clog-
ging. (Other machines choke up.)
Takes Dodder, Barn Yard Grass and Foxtail
out of Alfalfa and Millet "Slick as a whistle."
Takes Buckhorn from Clover.
Sorts Corn for Drop Planter.
Famous BEAN MILL. Handles all varie-
ties. Takes out the SPLITS, Clay, Straw, etc.
Handles Peas as well as any Grain or Grass
Seed. Removes foul weed seed and all
shrunken, cracked and sickly grains. Takes
out all dirt, dust and chaff. It is also a bully
chaffer. Handles 60 bushels per hour. Gas
power or hand power. Easiest running mill.



**For \$100, I Clean and
Grade Your Seed Grain**

You can't afford to plant common Seed
and take chances on a poor crop, when I
am offering to scientifically clean and grade
every bushel of your Seed Grain for this spring's
planting for one paltry dollar.

Here's my proposition, and if you are a smart
man you will write me before sunrise tomorrow:
Send me one dollar and I will ship you,
FREIGHT PAID by MYSELF, this improved
1914 Chatham Grain Grader and Cleaner, with
all equipment. Clean your Seed Wheat, Oats,
Flax, Barley, Peas, Beans, Corn, Grass Seed,
etc. Then **PLANT** those fine seed. **AFTER**
you have harvested a bumper crop, pay me
the balance of my low price. Not one penny
need you pay, except the \$1 until next Octo-
ber. And by October **YOUR CHATHAM**
**WILL HAVE MORE THAN PAID ITS EN-
TIRE COST IN INCREASED CROPS.** Then
you'll have it to work **FREE** for you the rest
of your life.

Your Dollar Returned
I only want the dollar as evidence of good faith—to
protect myself from mischievous boys. If after 30 days'
hard test, you don't want my "Chatham," send it back
at my expense and I will return the dollar.

A "Made-to-Order" Machine
Every "Chatham" is practically a made-to-order ma-
chine, for I send you the exact and proper Screens,
Riddles, Hurdles and Sieves to grade and clean every
Grain and Grass Seed grown in your locality. That's
the secret of my success. I would not be the leading
maker of Graders and Cleaners if I had tried to make
my equipment fit ten million farms. What would you
think of a clothing maker whose suits were all one
size? Wouldn't it be a miracle if he gave you a fit. Yet

all makers of Graders and Cleaners, except me, send
the same equipment, whether you live in Maine, Ohio
or Oregon. They wouldn't do that, if they had my 41
years' experience.

Extra Screens Free
I use, all together, 81 Screens and Sieves. It
usually requires 15 to 17 for the average farm. These
I select from the 81. After 41 years in the business,
I am pretty sure to pick the exact equipment needed
on your farm. If I shouldn't, just drop me a line and
I'll send you additional requirements. There will
be no charge for this.

Samples Graded Free
Maybe you have some Seed Grain that you can't
clean or grade or separate. Send me a sample. I will
purify it and tell you how you can do it cheaply. No
charge for this.

Seed Corn Sorted
My big Corn Sorting Attachment. Invented 2 years
ago, is a great success. Twelve thousand farmers and
many leading Agricultural Colleges are using it. It
is the only machine I know of which scientifically
sorts seed corn for drop planters.

New Book Ready
Send me no money now—just a Postal. For the finest,
most complete Book on Seed Selection I've ever writ-
ten. After the Book comes, write me what size ma-
chine you want and I'll ship it, freight prepaid, on
receipt of \$1.00. Then clean and grade all your Seed
Grain. If you write today, you get my Book by
return mail. Address nearest office.

Manson Campbell Company
Dept. 96
Detroit Kansas City Minneapolis

Farm Notes

Star Drills for Stones

By C. M. Weed

NOT being satisfied with the slow-
ness of the ordinary drill for mak-
ing holes in boulders to be blasted
I sent for a star drill of an inch diam-
eter. I found that after we learned
how to keep the hole free from the
powdered granite by pouring in water
we could drill much faster than with
the others. We used this eighteen-
inch drill more or less all summer
without sharpening.

I could find no local blacksmith in
the vicinity of my farm in Northern
New England who would undertake to
sharpen this star drill. So I took it
to a city firm that worked in iron
materials and got it sharpened at a
cost of thirty cents.

Wanting a shorter drill to start the
holes, I priced one about ten inches
long at a hardware store. The price was
\$1.15. Rather than pay this, I bought a
piece of Jessop steel, seven-eighths inch in
diameter, ten inches long and hexagonal in
shape. I paid thirty-five cents for it. I
took it to the iron workers and had a
splendid star drill of an inch diameter
made for thirty cents. So the drill cost
sixty-five cents, and is as good or better
than the \$1.15 one.

These star drills are commonly used for
drilling bricks, but not much for stones.
They should be tempered harder for the
latter use.

Any good blacksmith should be able to
make and sharpen these drills.

Fence-Post Preservation

FENCE posts of eucalyptus set in concrete
decay more quickly than posts set in the
ground in the usual way, according to tests
conducted in Hawaii. Charred posts decay
about as quickly as untreated posts. Posts
that have been creosoted resist decay the
most, and tarred posts are second.

While these experiments are by no means
conclusive for all kinds of wood, the prac-
tice of charring posts seems to be useless.
If posts cannot be creosoted or tarred they
may as well be used without any treatment
whatever.

Cement Weakened by Water

"THE Cement and Engineering News"
reports tests showing that Portland ce-
ment mortar, composed of one part of
cement and three of sand and cured in the
air, weakened from forty to fifty per cent.
after being soaked with water. The results
of these tests are offered as an explanation
for the weakening and crumbling of con-
crete tile drains very soon after their con-
struction.

Swat the Bushel

By H. A. Bereman

IN SOME places divorce proceedings
against this ancient, outworn and alto-
gether clumsy standard of measure have
been started. For example, potatoes, oats

and some other articles are bought and sold
openly by the hundredweight in the West.

All farm products might better be sold
and measured by the pound or hundred
pounds, rather than by keeping up the old
superstition that we measure by the bushel.
Even eggs should be sold by weight instead
of by the dozen.

In Montana they say, "Oats are worth
\$1.50 to-day." By this is meant \$1.50 per
hundred pounds. But they also say, "You
have on your wagon sixty bushels of
wheat." By that they mean there are 3,600
pounds, or sixty sixties by weight.

Nobody really measures by the bushel
any more. Most grains are measured in
terms of "legal weights per bushel" and
then translated back again into terms of
actual pounds.

This necessitates a roundabout way of
computing. The sooner we get our decree
of divorce and abolish the old measured
bushel, the better we will all feel about it.

If

By Berton Braley

IF YOU can see beyond the little distance
Encompassed by the limits of to-day,
If you have patience, energy, persistence
To plan your course and hold it all the
way,

If you are not afraid to break tradition,
Yet give it due respect for all it's worth,
And if you glory in the farmer's mission
To multiply the riches of the earth:

If you can love the everlasting tussle
With storm and drought, with every sort
of blight,

If you can put some brains behind your
muscle

And learn to make your labor count
aright,

If you can take the best your fathers taught
you

And leave their follies and mistakes be-
hind,

If you accept the lore that Science brought
you,

And use that wisdom with an open mind:

If you can save—and not be lost by saving
(Some men are dollar-foolish, penny-
wise),

If you can toil—and not be simple slaving
(For toil alone will never win a prize),

If you can wear your patience as an armor
Against defeat until your fight is won,

I rather think you'll be a first-class farmer,
And that's enough for any man, my son!

Wagon-Tire Brackets

By W. E. Clemons

I MAKE good shelf-
brackets from old bug-
gy-tires. Put a tire in
the vise, and bend as
shown in the illustration.
You can make the bracket
any size desired. Cut the
piece of tire so the bolt-
holes come in the right
place for the screws.
Such a bracket is excellent
for shelves in the kitchen,
pantry, workshop or back porch, and when
painted the color of woodwork looks well.

Hauling Water is Expensive

SHOULD we see four hundred or five
hundred freight trains of thirty or forty
cars, each filled with water, rolling by,
going from the corn belt to different parts
of the country where water is plentiful, just
at the time when there is a cry going up for
freight cars, there would be a strong protest
at once from American citizens against such
uneconomic railroad management.

The quantity of water mentioned is being
shipped just the same, but it is excess
moisture in the new corn. Federal experts
who have made a study of this matter show
that the American people are paying freight
on almost a half million tons of excess
water annually, shipping their corn to mar-
ket. Put differently, over fifteen million
bushels of corn could be shipped every year
in the space in freight cars that is now
occupied by corn that is swelled up full
of excess moisture.

Shipping this useless water makes every
pound of beef and every johnny-cake cost
more than is necessary. We must get busy
to prevent this unnecessary carrying of
water.

Handy Link

By Eugene Stollewerk

ONE of the handiest things
that we have in the line
of links and hooks is the
open link shown in the illus-
tration. It can be made by sawing out of
an old link a piece about one and one-half
inches long. The best size is made from a
link five inches long and the iron one-half
inch thick. It can also be made from a
round piece of iron. It can be hooked on
any whiffletree clip, and all hooks, rings and
links. It can be taken from one implement
and put on another in a few seconds. It is
also handy for connecting two chains on
which there is not too great a strain.

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OUR POULTRY CLUB

By special arrangement with the publishers of POULTRY HUSBANDRY, you can get this splendid paper for one year in connection with FARM AND FIRESIDE at a special reduced price. Poultry Husbandry contains splendid pointers and ideas for the raising of fine fowls. It is edited by the best authorities on poultry in America. It is chock-full of secrets of feed-mixing, quick-growing chicks and other information of great value to everyone interested in poultry-raising.

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Poultry Husbandry }

For One Whole Year

Address FARM AND FIRESIDE, Springfield, Ohio

YOUR HENS
YOUR FARM
YOUR MONEY

Farmers and Fanciers should get the FREE POULTRY BOOK and Catalogue written by ROBERT ESSEX, well known throughout America. After 25 years with Poultry, it tells how to make most from Eggs and Hens for Market or Show, contains Pictures of 20 Poultry Houses, tells cost to build; describes AMERICA'S LARGEST LINE OF INCUBATORS AND BROODERS—\$2.25 to \$48 each. Write today.

Robert Essex Incubator Co., 83 Henry St., Buffalo, N. Y.

Rider Agents Wanted

In each town to ride and exhibit sample 1914 bicycle. Write for special offer. Finest Guaranteed \$10 to \$27 with Coaster Brakes and Puncture-Proof Tires. 1912 & 1913 Models all of best makes.... \$7 to \$12 We Ship on Approval without a cent deposit, pay the freight, and allow 10 DAY'S FREE TRIAL. BICYCLE DEALERS: You can sell our bicycles under your own name plate at double our prices. Orders filled same day received. TIRES, coaster brake rear wheels, lamps, sundries, parts and repairs for all makes of bicycles at half usual prices. DO NOT BUY until you get our catalogues and offer. Write now.

MEAD CYCLE CO., Dept. H-83, CHICAGO

New Holland
Feed Mills

Will grind cob corn, shell grain into table meal. Farmers' sizes to run with 1 to 12 H.P. Good capacity—well made—sturdy. Guaranteed—your money back if not satisfied. Write today for catalog, low prices and trial offer.

NEW HOLLAND MACHINE CO.
Box 44, New Holland, Pa.

LITTLE GEM HATCHERIES

AND BROODERS cost only 40c. each. Over 225,000 now in use. This lady hatched and raised 1,712 chicks in them last year. Send Stamp for Catalog. F. GRUNDY, Poultry Expert, Morrisville, Illinois

43 VARIETIES poultry pigeons, ducks, geese, water fowl incubators. Feed and supplies Catalogue 4 cents. MISSOURI SQUAB CO., Dept. XX, Kirkwood, Mo

112-PAGE POULTRY BOOK FREE

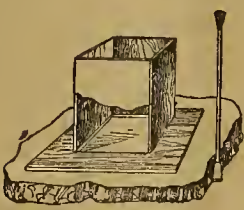
If you are thinking of buying an incubator or brooder you should send for our big 1914 catalog at once. Describes many new, exclusive improvements in this year's PRAIRIE STATE Incubators and Brooders. Also contains about 60 pages of valuable poultry information—how to feed, rear and breed; treat diseases, poultry buildings, home grown winter feed, etc. Just out—a postal brings it FREE. Write today—now.

Prairie State Incubator Co., 109 Main St., Homer City, Pa.

Poultry-Raising

Stone-Age Bone-Mill

By J. S. Edwards



ONE of the most useful devices we have on our farm and which has been in use for over thirty years is a bone-mill which can be made in an hour. Make a box ten by ten by fourteen inches and open at both ends. Take a piece of plank two by twelve by twenty-four inches, and cut a square hole in the center the same size as the inside of the box. Nail the box over the hole in the plank. Next get a thick flat stone, or make a cement slab, nice and flat on top. Place it near your hen-house, and your mortar is ready. For a pestle use a common post-hole digger-bar with tamper on one end and chisel on the other, or any blacksmith can make one out of one-and-one-half-inch iron pipe. It is of itself a handy tool. Now stand on the sides of the plank, put bone in the box, and smash it with the tamping-bar. After you have worked for a few minutes set the mortar to one side, and the poultry will pick all that is small enough. Then gather the rest, and break it into smaller pieces. Break up limestone for grit in the same way. Five minutes each morning will keep a large flock supplied with bone and grit.

Where to Sell Eggs

By E. L. Vincent

OF ALL poultry problems it seems to me none perplexes people more than that of disposing of eggs to the best possible advantage. It is easy for most folks to get eggs. That has for the past few years been talked about and written about so much that most folks understand up-to-date methods of feeding and caring for the birds so well that their hens are shelling out the eggs at a rate that beats anything we ever have seen in this country before.

But what shall we do with our eggs after we get them? We want to sell them so as to realize the most possible from them. Now how shall we do it? These are questions which make more trouble on the farm than any other connected with the poultry business of to-day.

The Farmer's Time is Valuable, Too

On our farm we have tried about every known plan, from the peddler's cart to turning into peddlers ourselves, going from door to door with our poultry products; and I am satisfied that, for us, shipping to reliable commission men is the most satisfactory of all. To make this a little plainer, let me say that our farm is twelve miles from town, over a hilly road which has not yet been improved according to present-day methods. It is a long jaunt to town and back. We have to get up early, and, after disposing of our produce and making the homeward trip, it is often dark, especially in the time of the year when the days are short, and we have to go on the run every minute at that. Often we have not taken the time even to get a bite to eat while in the city, but waited until we were on the way home and then taken our lunch.

This means quite a loss to the farmer who has other work to do—and who of us has not? I do not think we place high enough value on our time as farmers. The merchant and lawyer feel that they have suffered an actual loss when for any reason they have been compelled to be away from their desks, even for a single day. Time is money, and anything which enables us to save it is worth considering.

Now, a mile and a half from our place there is a little village which is the end of a stage route. By taking our eggs down there, we can ship them every day. As we have at the present time about five hundred hens, it is plain that we get a lot of eggs, and these must be marketed promptly and regularly. This is why I say that, for us, the plan of shipping to a middleman saves us money. If we were located near a town or city where a co-operative business could be done, that would make a difference.

Some day we will be so situated, and then good-by to the commission man!

Market at Home or Elsewhere?

But what about the relative prices obtained for eggs marketed at home and those which are shipped? Last July when our home market offered 25 cents a dozen, those shipped to New York brought 30 cents. There is generally less difference during the cold season. This is also the case when the spring glut comes. It is true we have to pay thirty six cents express charges on a crate and buy the crates, which can be had at about ten cents each. In addition to this, we wash and sort the eggs. But with all this work and expense, we are satisfied that when we can have fair dealing at the other end of the line we save money by shipping.

Where one is near a good market, so that he can slip away and dispose of his eggs and get back home in a little while, that makes a difference. All these things must be taken into consideration. It is not always easy to find a good, reliable man to handle eggs at the other end, but I am optimistic enough to believe that the good men have not all gone to Washington, and that some of those who are left are in the commission business. It is sometimes said that it is uphill business to make men honest by law; probably there is some truth in it. New York State, however, passed a law last year placing a good many restrictions about the commission business. It remains to be seen whether the farmer will come out any better than he did before.

Incubator Difficulties

And then there is the problem of the incubator. We have had some trouble about that on our farm. The average hen-house is no place for the incubator during the hatching season. The temperature cannot be kept even enough. There is always more or less danger from fire. Many insurance companies reckon on the extra hazard due to the presence of the incubators in the house or barn, and demand additional premium, while there are those who refuse them a place under any circumstances. We have been driven to the extremity of paying the extra charge and having the incubators in one room of the house, but we do not like it and have been thinking how we could make some other arrangement.

We are just now planning for a little house of cement for the reception of the incubators. About the house we have a fine hedge of Norway spruce. This runs along the east side of the house for some distance, far enough removed so that there is a wide driveway between the hedge and the buildings. We have about decided to dig down a few feet on the sunny side of the hedge and build a structure of cement long enough to receive the incubators, and high enough so that we can stand in it. The roof will be the only inflammable substance about it, and we do not look for much danger from the rafters and roofing, no matter of what material it may be constructed. Insurance men surely could not object to such a building as this.

Chickens' Water Supply

Another problem of the poultryman is that of water, or rather, as is the case with many, lack of water. It is only a day or so ago that the young man in charge of this part of our farm work said, "Our hens take more water than the horses. It is quite a job to keep them supplied all the time." When you think that we have four big horses to water it may be seen what this really means. With the well at some distance from the poultry-houses, the work of getting the necessary water is pretty heavy. To make this as light as possible, we are putting down a driven well close to the yards. If we can get a good supply at this point it will greatly lessen the burden of carrying water.

One of our neighbors last spring lost a good many of his early chicks through the depredations of rats. Here is a problem of no mean proportions. How shall we fight these pests? For one thing, the houses ought to be furnished with foundation walls and floors through which rats cannot make their way. Cement will do this to perfection, if proper work is done. Besides the cement work, traps should be set in the runways of the rats, and this should be done before they get a taste of the blood they love so well. If put off till they have taken some of the chicks it is far more difficult to catch them at their tricks. The loss of a few chicks may spell failure for the season's work.

Chicken by Parcel Post

By Mrs. L. S. Eaton

WISHING to send a dressed chicken by parcel post, and having only a limited knowledge of it, I wrote a note to the R. F. D. carrier, asking for circulars or any literature with directions in detail for the use of the parcel post. His reply was, "I am entirely ignorant as to the whole matter; you had better inquire at the village post-office."

The ground was deeply covered with snow and I was ill with "grip." After due

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FROM FACTORY
TO FARMER

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WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. The following are a few of our big values

26-inch Hog Fence, - - 14c. per rod.
41-inch Farm Fence, - - 21c. per rod.
48-inch Poultry Fence, - 22½c. per rod.
Special Barbed Wire, \$1.40 per 80-rod Spool.
Sold on 30 DAYS FREE TRIAL. Get in with the shrewd buyers by sending for our big free Catalogue. It's full of fence bargains. Write for it today.

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Box 18 Winchester, Indiana

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BIG
Wires



One Penny For a
DOLLAR-SAVING BOOK

Gives valuable fence facts—shows how to get better quality at sensational direct-from-factory prices.

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is guaranteed to show the biggest saving on highest quality fence. Freight prepaid. All Big No. 9 wires. Open-Hearth steel, heavily galvanized, rust proof, pig tight, stock strong. Just a penny postal brings Free Book—NOW.

BOND STEEL POST CO., 42 E. Madison St., Adrian, Mich.

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NEW BARGAIN BOOK FREE
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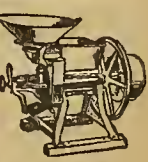
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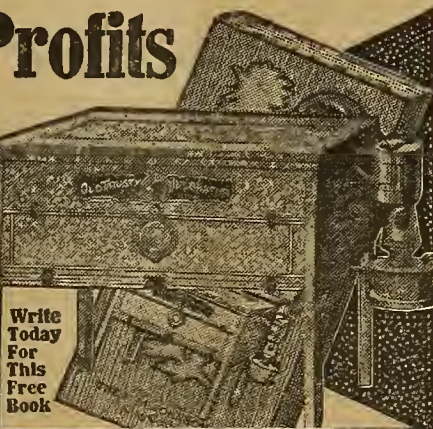
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time my indisposition left me, and I proceeded to the post-office. There they knew no more than I did, and referred me to a placard tacked on the wall. This enlightenment I had already obtained through reading the editorials in FARM AND FIRE-SIDE.

Our village is fifteen miles west of Cincinnati. I finally sent a young dressed chicken which weighed between two and three pounds, wrapping it first in oiled paper and using an outside wrapping of thick glazed paper. The whole was well tied and plainly marked. I placed twenty-five cents in the mail-box, with written directions to place on the package the necessary parcel postage, which amounted to eight cents.

The mail is collected about 10:30 A. M. daily. The weather was quite cold, but that chicken lay in a dirty, hot post-office until the five-o'clock train carried the mail to Cincinnati, as there was no other mail train before that time.

A telephone message next day said "Received chicken at 8 A. M. in perfect condition." They had it in time to cook for a noon dinner. The cold weather was an important factor in favor of the chicken. What condition would any perishable goods in hot weather be in, to lie in a hot, dirty post-office for six hours?

A Mince Pie Went Through Satisfactorily

Not long afterward I sent a mince pie which was similarly handled; a phone message said "pie arrived in a flattened condition, but still quite edible." It was well wrapped in oiled paper and placed in a pasteboard box. The postage on this was six cents.

The box factories have a task ahead of them, in manufacturing and offering for sale receptacles, or wrappings, suitable for the transportation of farmers' produce. These receptacles should be light in weight, durable, neat, and compact; and for sale at the post office or near it. Oiled paper is at present the most hygienic first wrapping available for food products.

None of the farmers in my neighborhood are enthusiastic over parcel post; they really know little of it. However, it will be an avenue of great value to the farmer, especially on a truck farm, if the service is better regulated. The best way to regulate it is for the farmers themselves to rouse up and get to work. Educate the farmers by having literature distributed by the R. F. D. carrier, and maps for sale at convenient places.

Poultry Raised in Florida

By E. J. Hall

I DOUBT if there is any State in the Union where poultry can be raised more profitably than in Florida. The climate is mild, there is plenty of sand and gravel, land is cheap, and the fowls can have a fine run out of doors most of the year.

While on a recent trip through the Everglade State I visited several poultry farms that are proving to be very profitable. Dressed poultry and eggs command good prices and are much used on account of the scarcity of good meat in that locality.

This photograph was taken recently on a farm in Marion County. The owner began business in a small way and in four or five years has developed a plant that is a valuable object lesson to poultrymen in the South. He pins his faith to White Leghorns. He declares they are the greatest layers in the world. His plant, covering several acres, is well equipped and the poultry houses are kept in a sanitary condition. His fowls are fed with care, and the business is conducted so scientifically that the best results are obtained. He had about one thousand laying hens when I was there.

The planters are learning that just as good corn and cereals can be raised in Florida by careful cultivation as can be produced in many of the Northern States. Feed for poultry is readily obtained, and I look to see in the near future a great growth in the poultry industry of the Everglade State.

EDITOR'S NOTE: Mr. Hall is a photographer of farm subjects. His work takes him all over the country, and so his viewpoint expressed above comes from one who has seen farm conditions in many places.

Barred Rock Hens in the Molt

By W. H. Rounds

THIS flock of fifty-three birds in the aggregate laid 5,880 eggs in the first half of 1913, an average of 111 eggs per hen. The yield of eggs each month was as follows:

January	834 eggs
February	1,056 "
March	1,242 "
April	1,052 "
May	882 "
June	814 "

Total5,880 eggs

The hens were comfortably housed and fed a dry mash of ground alfalfa, wheat bran, corn chop, and wheat middlings; and corn, wheat, and oats for scratch feed, together with oyster shell and charcoal.



These birds averaged 111 eggs per hen for the first six months of 1913

The housing and feed were merely what any farm can readily provide. The birds were yarded constantly in a rather limited enclosure.

Better Results at Less Cost

By C. H. Hobbs

"VARIETY is the spice of life," and in no place is this "spice" of more value than in the food supply for your hens. I have fed grains, one grain alone, wet mash, dry mash, a combination of grains and mashes, and, last and best, a complete combination as follows: The four grains, wheat, oats, corn and Kafir; a mash composed of two parts bran, one part each of shorts, fine corn chop or meal, ground Kafir, alfalfa meal and meat meal, one-fourth part oil meal, and one pound of salt to each hundred pounds of the complete mash, weighing the ingredients instead of measuring them; a hopper of granulated bone and plenty of oyster shell and mica crystal grit.

I have sixty hens, pure-bred Buff Orpingtons, and my daily winter ration is as follows: In the morning I throw a couple of quarts of Kafir corn or wheat in the chaff for them to scratch for. At noon I feed boiled oats, five quarts in their dry state, boiled tender in an abundance of water so they can absorb all they will. The boiling is done long enough before they are needed to let them cool sufficiently in the vessel, usually being put on the stove the first thing in the morning. At evening I give two or three quarts of corn, or more if they will eat it all up. Every morning I put five or six quarts of the dry mash in the feeder unless they have let it accumulate, for I aim to keep it pretty close to the consumption, letting them clean it up once in a while. Now you will notice that the percentage of meat meal

and alfalfa meal in this mash is higher than ordinarily given. I aim to have the meat meal run about five to seven per cent. of the entire daily ration. The object in using the mash is to provide the meat meal and alfalfa meal especially, and incidentally the bran and other ingredients. Now I do not think it necessary to utilize more of these other products than is needed, for in my experience there cannot help but be considerable waste in feeding ground grains. The ratio we want to keep in mind is with all the grain fed, not just that in the mash.

To vary the noon meal I often boil wheat instead of oats, using only three quarts instead of five. Sometimes I scatter some more grain in the chaff later in the forenoon if they do not seem to be satisfied. I aim to give them all they will eat of all the different grains and the mash at all times. Where there is such a variety and they get it just as they want it, they will never fatten themselves to any great extent, at least that has been my experience with the Orpingtons.

Keep Their Appetites Whetted

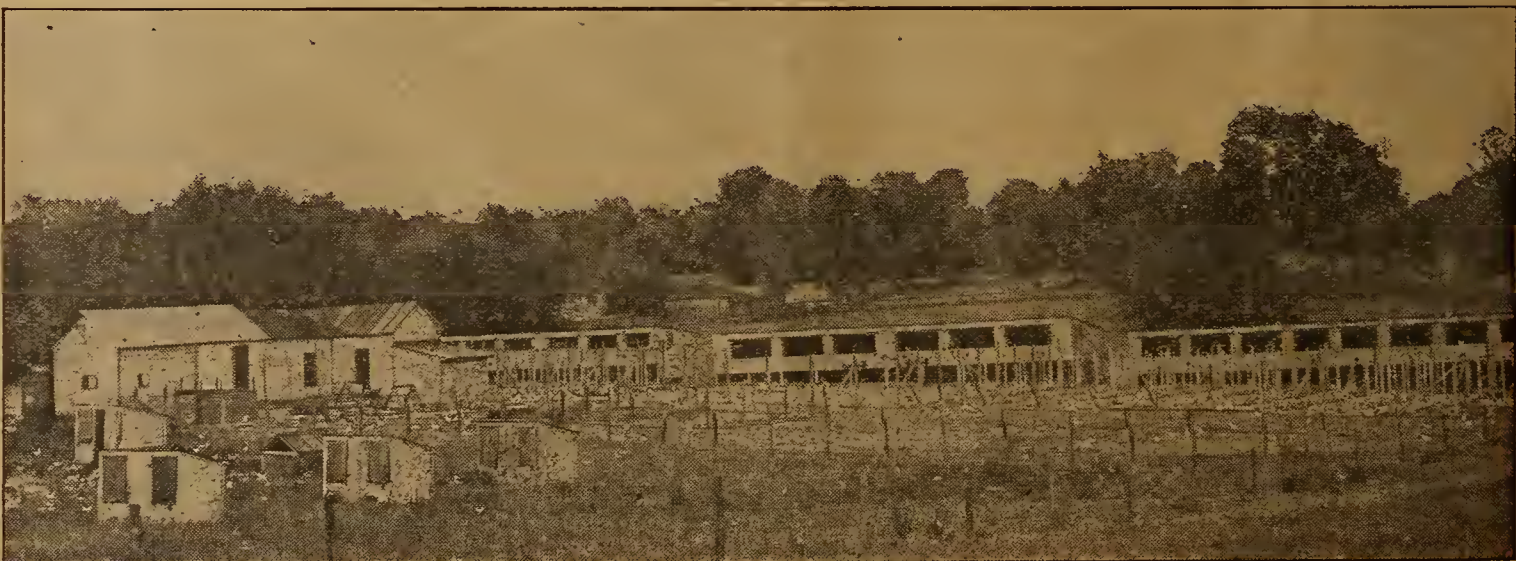
I have kept accurate account of the feed cost of my hens. Last year it averaged eight cents each in summer and ten cents each in winter per month.

The lowest average number of eggs laid by my sixty hens in the past year was in August, and they were all molting rapidly. This average was twelve a day, though they fell to six one day and to eight several days. The highest number was in May, being an average of thirty-eight eggs a day, which were worth over three times the cost of their feed. The sale of eggs for hatching brought my average price for the spring season up to thirty-two cents. For five months, from August first to January first last year, my hens averaged just twelve eggs each per month. This is considered the off time for egg production, but the value of six eggs would have easily fed them.

I did not keep the accurate account when I was feeding grains alone that I have since, but when I changed I made allowance for the mash and continued to feed as before. In a short time they were leaving feed. I cut down the grains, and kept on cutting down as they consumed less, until in a month they reached the normal and have not varied greatly since. While this variation in feed consumed has been noticeable, it has not been nearly so much so as the regularity of the egg yield. My hens are penned, and a neighbor has the very same stock on free range but does not bother with anything but grain and usually feeds corn and either wheat or Kafir, giving them all they will eat, and never gets more than an average of two thirds as many eggs per hen as my flock lays, and his hens often take balky spells.

Do not get the impression I try to reduce the amount my hens eat, for I do not. The more hens will eat when the ration is properly balanced the more eggs you will get. If my hens stop eating heartily for a couple of days they soon show it in the egg yield. Keep their appetites whetted up to the limit, but provide such a variety that they will not eat a lot that is not assimilated. Certain elements are necessary, and these cannot be obtained from a grain ration without their having to eat much more than their systems call for of the elements of which the grain is mainly composed to get the little it contains of the other needed elements. This surplus deranges the system.

Do not feed in filth. Fix good troughs. I make a V-shaped trough out of one by fours, and provide six inches of trough for each two hens, one on each side. Grains may be fed in "clean dirt," but moist feeds will take up too much of it.



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The FARMERS' LOBBY.

THE hog cholera has visited our farm, and therefore I'm going to write the Lobby about an entirely different and eminently practical phase of the problem of meat. This problem concerns all hog-raisers.

"Three of the little pigs are dead this morning; looks like cholera," announced the foreman very laconically. That was the first hint. It came at breakfast. There had been reports of cholera within a few miles of us, and in other sections of the State (Maryland) it had been rife; our immediate neighborhood had thus far been exempt.

There were twenty-four small pigs in a pasture, with their mothers. Separated from these, in the feed lot, were twenty hogs of from two hundred to three hundred pounds, and about twenty-five shoters of from seventy-five to one hundred and twenty-five pounds.

Father and I once had about eighty hogs almost ready to ship, back in Iowa, when the cholera swooped down on us and in nine days there were but five left. The painful recollection of that incident surged back into my mind.

"It's me for the Agricultural Department," I remarked. "We'll see what the high-brows can do in this case. We'll do whatever they tell us."

Hurrying in to Washington I tore around to Doctor Dorset, the cholera specialist. I almost lost a lung in my haste. He condescended briefly and questioned closely. Symptoms? The hogs that were affected at all were sluggish, weak, especially in the hind legs; didn't want to eat; coughed with a violent jerk, as if from hiccoughs; the eyes ran and the bowels were very loose. Not much doubt it was cholera.

As I wanted to learn, as well as to save the hogs, Dorset lectured me briefly. Hog cholera exists all over the world, wherever there are hogs to have it. It was first reported in this country in Ohio about eighty years ago. Once started in a herd its average record is about seventy-five per cent. of fatalities.

The Single and Double Treatment Explained

THE disease is caused by a germ which is called "ultra-microscopic;" so small that no microscope has ever discovered it; but they have ways of knowing it's there just the same. This germ is present in the blood, urine, and excretions of sick hogs. Inject the blood or urine into a sound hog and he will almost certainly get the disease.

Hogs kept in filthy lots, compelled to sleep in damp places, using filthy troughs, drinking bad water, are most liable to the disease; if the germ gets to them their vitality is so low that they fall easy victims. For the hog, be it known, is essentially a clean brute. He would be a dude of animal creation if men hadn't demoralized him by imagining that he liked filth and by giving him too much of it.

The germ of cholera is very easily transported; anything that carries dirt from an infected lot may start cholera in another herd. Live-stock cars transport it; stock shows are liable to; buzzards, that used to be regarded as scavenging servants of humanity, are now considered as dangerous disseminators of the disease. A very common cause for spreading the disease is the hurried shipment of herds in which the disease has appeared.

But about the little germ that nobody ever has seen. A hog that has recovered from cholera is thereafter immune. Now, if you inject the blood of a cholera-sick hog into one of these immunes, the immune will not become sick, but his blood will acquire a property that enables it to protect other hogs from the disease. It all gets back to the theory of good germs and bad germs in the blood: always fighting. When the bad germs win, the hog dies. When the good germs win, the hog gets well. The hog that has been sick, but recovers, has the good germs, and no bad ones. Inject those good germs into the blood of a well hog and they will multiply, and fortify him with an army of protectors in case the bad germs come along. That's the theory.

This brings us down to the treatment of hogs by inoculation. If an immune hog—one that has had the disease and recovered—be inoculated with the blood from a cholera hog, his blood will in a few days take on qualities which make it a preventive of the disease. The good germs have their fight, win it, and get filled with the ambition for more worlds to conquer. If, then, you cut off the tail of this hog and draw off the

Hog Cholera and the High-Brows

By Judson C. Welliver

blood, you can, after some treatment of the blood to remove fibrous elements, use it as a preventive serum. If the serum is good and is handled rightly, its injection into a healthy hog will give him the power to resist the disease.

But this resisting power is only temporary. It will last for from four to seven weeks; after that the good germs seem to get tired, lose their fighting quality, and the hog is once more liable to get the disease.

How to be Sure of Good Serum

TO SECURE permanent immunity, therefore, you must give a double treatment. Catch your hog and inject this serum into one thigh. At the same time inject into the other thigh a very little of the blood from a cholera-sick hog. What happens? The serum, filled with benevolent germs, distributes them through the system. The blood from the sick hog brings in the malevolent germs, and likewise distributes them. The two armies of germs start fighting; and when they are done—if everything works out according to the theory and the vast majority of experience—the wicked germs will be killed, and that hog will be cholera-proof for life.

This double-inoculation system is likely to be dangerous; if the hogs get too many bad germs and too few good ones, the bad ones may win the battle. But if the serum is good the danger is not great. By all means don't take the chance of getting fake serum. Buy it from your state laboratory, if the State has one, or from some private manufacturer that holds a license from the Department of Agriculture. Insist on knowing about this license. The Department has authority to inspect and license the manufacture of serums transported in interstate commerce; it can't control that which is not shipped across a state line. For this reason it is a good idea, if you can't buy from a state institution, to order from a manufacturer outside your own State.

When you've got the serum hire a good veterinarian to administer it. The authorities all insist that it isn't safe to do it yourself. I don't take much stock in that, however. After watching a veterinarian do the business on a half-hundred hogs, any intelligent man with an understanding of the basic theory of it all should be able to treat his own hogs. On this point I feel right keenly, because the veterinarian who inoculated mine charged me \$20.

So much for the lecture on theory. When Dorset had explained it I said:

"Have you any of the serum?"

"Not a drop," he replied.

"Then what is the use listening to all this theory?"

"Oh, you can get it from the Maryland Agricultural College, I guess, if they haven't used all their supply," he explained.

The Pigs Went on Dying

DOCTOR DORSET called up the Maryland college and got its chosen expert, Dr. B. M. Bolton. Yes, he had plenty of serum. How much did I need?

"Enough to inoculate about eighty hogs averaging nearly two hundred pounds," I replied. I wanted



Well, we saved half of them!

plenty. He said he'd send it by express, at once, C. O. D. And he did. The stuff arrived the next morning, and the charges

were \$60 for the serum and 75 cents for the expressage. I fainted. On recovering I paid the bill and, with a numb feeling, decided that in the cause of education I would go ahead, even if it cost more than the hogs were worth. I'm told that in most places it would cost about half that much; at any rate, we got a good deal more than we needed.

We had arranged to have a veterinarian on hand and, by advice, gave only the single treatment. That is preferred when the disease has already actually broken out in a herd. The double treatment is used mainly on herds that have not been exposed and which it is desired to render immune.

Mr. Veterinarian had the hogs herded into the smallest available enclosure, and then the men caught them one at a time for treatment. It was one of the finest antifat exercises I ever observed, catching a robust 200-pounder and holding him by the hind legs, head down, while the serum was injected with a little syringe.

First the veterinarian carefully sponged off the inside of the hog's thigh with soap and water; then with a disinfectant. He explained that at this point the utmost caution must be observed to be clean; and he was certainly conscientious about it. The thigh being duly sponged, the next process was to jab the needle end of the syringe well into the leg, so that there would be no doubt about getting the dose into the blood, and then slowly squeeze the contents out. This seemed to be an operation requiring considerable care and some knowledge of the hog's circulatory anatomy, but the trick is not hard to learn after observing it.

It required a good part of two days to vaccinate our herd. Then we sat back and waited to see if they'd have the decency to stop dying. They didn't. That's the bald, crass, ignoble truth. They went right on dying. Dorset had warned me that they very likely would. It was the old case of a stitch in time.

Catch Him Little and It Costs Less

ALL the pigs had been exposed to the disease before we treated them. It was too late to save the little ones. There were twenty-four of them at the beginning, and every one went within ten days after the treatment.

The explanation is that the small ones are much more liable to the disease than the adults. They have less resisting power. We certainly found it true, for while we lost all the twenty-four pigs, only one of the brood sows in the same pasture with them died.

But with the larger hogs we had much better success. Of the twenty largest ones, which were nearly ready to kill, we didn't lose one.

We lost all the small pigs and saved all the killing hogs. Then there were the twenty-five or twenty-six shoters, running in the same lot with the killing hogs. These were all treated at the same time; and about half the shoters have now departed this life. In numbers we lost about half the herd; in weight and value, very much less.

Was it a success? Personally I think it was. Only next time I shall do it differently. Here's my plan as worked out in the light of experience:

Every litter of pigs will be given the double treatment, for permanent immunity, about a week after they are weaned. That is the scheme that the authorities practically all recommend. Some few insist that no hog should be treated until there is reason to fear an outbreak of the disease. Maybe so; but when you wait for the disease to break out it's too late. I gather that with small pigs the double treatment is likely to cause a small proportion of deaths; but if a few do die it will be proof that the treatment worked and that the survivors are really immune.

Using the double treatment when the hogs are young is much more economical. The serum is administered only in proportion to the weight of the hog. Catch him little and it costs vastly less.

Being handy to supplies, I don't intend to keep serum on the place; but farmers at a distance from laboratories can easily do so. The stuff will retain its qualities a long time if maintained at a temperature of from fifty to sixty degrees, which can be done by hanging it down a well the right distance; a little experimenting with a thermometer will show how far.



The Burden of Yesterday

By Adelaide Stedman

Illustrated by R. Emmett Owen



Synopsis of Preceding Chapters

Two love stories are entangled in a web of complications. Faith Hamilton and William Drake are trying to overcome the physical obstacles which barricade their way; Ernestine Cumnock and Robert Lewis are blocked by a misunderstanding and a fact in Robert's past.

Drake is supporting his mother and his widowed sister-in-law, Laura, with her two children. This family is so inharmonious that he cannot ask Faith to become a member of it, neither can he afford a separate household. The solution at one time seemed at hand when a relative, Jobyna Price, offered Laura and one child a home with her. The home, however, was a dull one, and the pleasure-loving Laura feigned such sorrow over leaving her daughter Florence behind, that the plan was abandoned.

Ernestine Cumnock loves Drake's secretary, Robert Lewis, whom Drake has rescued in childhood from the Juvenile Court, where he confessed to stealing three cream puffs. Robert misconstrues one of Ernestine's conversations to mean that she knows and disregards this blot upon his past, so he feels free to win her. Having done so, knowledge of the cream-puff incident comes to Ernestine's father, and through him to Ernestine, who despises Robert's silence on the subject. About the same time there occurs a shortage of one hundred dollars in Robert's accounts.

Chapter XIV.

IT VERY often happens that while slow, prudent planning goes awry, some quick impulsive decision brings success. So thought William Drake on the morning after his momentous evening with Faith. He lingered in the dining-room after breakfast, picturing another face than Laura's behind the coffee pot; figuring, figuring, figuring on how to bring about the reality behind his daydream.

Mrs. Drake lingered also, reading and re-reading a letter the morning mail had brought her.

"I—just got a letter from Jobyna Price," she remarked.

Drake sighed.

"That was certainly a false alarm!"

"Perhaps not!"

"What?" The man questioned sharply struck by the excited note in his mother's voice.

"What would you say if Jobyna Price were perfectly willing to take Florence too?"

"Mother!"

For a moment this providential answer to his problem made him oblivious to all other considerations.

"Then I'll bring home a daughter you can love!" he exclaimed. "Faith—"

"I knew it!" Mrs. Drake broke in. "Oh, Will, Will!"

For almost the first time in his life Drake was so self-absorbed, or rather so love-absorbed, that only after a half hour's enlogia about Faith did he recover enough of his usual thoughtfulness to realize the sacrifice his mother was making.

"But how about giving up little Florence?" he questioned, suddenly troubled. "I thought—"

Mrs. Drake met his eyes bravely. "After all my criticism of Laura it would not look well for me to stand in the child's light!"

"But—"

"It will be hard, of course, but your happiness will repay me—I—" Her voice dropped as she went on. "Perhaps I'll be spared long enough—to let—your children—know—their grandma."

Tears sprang to the man's eyes, while all that was best in him shone in his dazed, reverent look. He crushed the frail little figure in his arms, kissed the trembling lips, and then he hurried away at once sad and happy.

Arrived at his office he immediately telephoned Faith and told her the wonderful good news. "Come to lunch with me," he begged. "We have a lot of planning to do."

His door opened and closed as Robert entered.

"Good-by," he said, ending his telephone conversation in a tone that made the boy look at him curiously.

There had been no further talk between Robert and his employer since Mr. Cumnock's visit, for Robert had insisted that before anything more could be said he must trace the missing money. Reassured by Mr. Drake's confidence he had laboriously searched for his mistake, and now at the end of a week his face, as he entered the office, told Mr. Drake that at last he had been successful.

"It was the bank," he said with weary triumph.

"The bank?"

"Yes, I explained what had happened to Mr. Crosby, the cashier, who knows me, and to-day I got a notice that their account for that day shows a balance of a hundred dollars which was unaccounted for. Of course Mr. Crosby put two and two together. They simply short-changed me when I cashed the check for the pay roll. I—wasn't thinking of what I was doing and didn't count the money. Just put it away."

He laid the bank's letter with the enclosed check before Mr. Drake with the same tired satisfaction.

"You've had a hard week," the man commented sympathetically, knowing what the atmosphere of the outer office must have been, "but you mustn't let this one experience make you bitter."

"I won't," he promised impulsively. "Two people believe in me—you and—" He caught himself up abruptly and turned crimson.

"And Miss Cumnock," Drake finished gravely, remembering Mr. Cumnock's words. "She knows all about you then? I am very glad to know that."

"Yes, sir."

"You told her?"

"I didn't have to."

"What do you mean?"

"She was in the office the day I came—a dirty, scared little kid! Don't you remember? She told me she remembered everything, so naturally we—didn't—talk about it and—"

Drake understood, and his heart contracted with mingled pity and justified pride. He rose and put a steadying hand on the boy's shoulder.

"I'm afraid you took too much for granted."

Robert's startled look was a question. "She knows only—what—she saw."

The boy took the shock in silence.

"How do you know?" he questioned at last.

"Mr. Cumnock told me."

Tactfully as he could the man explained what the attitude of Ernestine's father was, stopping only once to say haltingly as Robert's lips twitched, "This hurts me boy—as much as it hurts you."

At the conclusion of the brief narrative the muscles of Robert's jaws were rigid and he swallowed with difficulty two or three times, but that was all.

Nothing could have touched Mr. Drake more. He saw before his eyes the boy with his quick-driving emotions, hardening into the man. With quick intention he decided to drop his old fatherly rôle and to take a man to man attitude with him.

"Robert," he said, "I know you're going to cut out heroics and face this thing like a man."

Robert looked up roused, and Drake knew he had

had sent her fastened at her waist, her sweet face flushed and bright-eyed, she took Mrs. Drake's heart by storm.

Of course Laura felt that Faith was her natural enemy. Her mother-in-law's news had sent her into hysterics. Was there no escape from that horrible offer of Jobyna Price's?

With the instinct of an actress she realized the ineffectiveness of repeated scenes, so she did not feign illness. No, she decided to receive Will's fiancée with quiet resignation and just bide her time. But she had not much hope. She might manage a man but not another woman.

For the evening's festivities she dressed herself all in black, leaving off the bits of jewelry with which she usually loved to adorn herself. But far from being quiet and subdued, the effect was more startling than if she had worn scarlet.

Her greetings to Faith were effusive and tearful.

"Forgive me, dear, for weeping," she whispered tremulously. "I love you already, and I'm so happy, but just to-night I can't help being a wee bit jealous of the woman who from now on will be all in all to Will. He's been such a wonderful brother! It's been such a happiness to feel that he needed me, if only to make his home bright and cheerful; but now"—she smiled with a sweet look of renunciation—"it will be a joy to go away—since that will serve him."

"I thought I understood William to say that this offer was such a splendid opportunity for you and the children," Faith ventured.

"Oh, it is! It is!" Laura hastened to say, as if striving to correct a mistaken impression. "I tell you I'm perfectly happy!"

Florence and Betty had been allowed to stay up to meet their new auntie, and now shouts of merriment from them ended the brief conversation between the two women, drawing Laura away.

Mr. Cumnock's joyality was marked. It was against his code to whine, and he had come that evening to prove himself in Faith's eyes what he called a good sport. Nevertheless, his pride was still sore, and in this abused, self-pitying mood Laura appealed to him tremendously.

With her sweetest maternal air she quieted the children, then seated herself beside the big Westerner, murmuring, "For those of us who have loved and lost, such an occasion isn't altogether joyous. It brings up such bitter sweet memories."

The self-pity in Cumnock's heart responded eagerly, and soon he and Laura were exchanging semi-sentimental confidences with a mournful gravity they both enjoyed tremendously.

Ernestine, as she sat beside Kirk Hazleton, hardly listened to what he was saying, as her eyes wistfully followed Faith and Mr. Drake about the room.

Her father had not spared her in the retelling of Robert's story, and he had made it seem as if the boy had deceived her deliberately and was nothing better than a fortune-hunter with criminal instincts into the bargain.

The boy was the last to arrive. His appearance in the little living-room caused a small sensation. So Drake, after the first brief greetings, tactfully conducted him to his mother and Faith, telling him of his engagement and so allowing time for Ernestine and her father to recover themselves. Glancing in their direction he caught Chester Cumnock's eye, while a motion of his head registered his desire to speak his mind. Drake went to him immediately.

"Erny and I would have waited for some other evening if we'd known that boy was to be here," the big Westerner growled.

"I believe I told you that Robert would be welcome at my home at all times," Mr. Drake replied smoothly.

Involuntarily Robert glanced to where the girl was sitting, pretending to be absorbed in conversation with Kirk. She gave Robert no opportunity to speak to her alone until they were walking into the dining-room for the late supper, when he was able to question:

"Aren't you even going to give me a chance to explain?"

"You've waited so long," she retorted sharply, "that I've lost interest in what you have to say."

Then Kirk began speaking to Robert. The boy's senses were intensely acute to trivial things, as they often are after a shock. Almost stunned by Ernestine's unexpected bitterness he listened to Kirk attentively, wondering again at the elusive resemblance to someone he had seen that Hazleton always presented.

Ice cream and cake appeared on the table. Mrs. Drake had innocently made some old-fashioned cream puffs for the occasion, and as they were served Robert felt as if every eye in the room was on him, though in reality no one thought of the connection.

When at last he looked up, crimson and shaken, young Hazleton was saying laughingly:

"See here, Mrs. Drake, these cakes are too good to waste for a trifle like good manners! I can't eat 'em satisfactorily with a fork, so here goes!" He lifted the confection to his mouth with a mischievous boyish look of doing something forbidden, and suddenly across Robert's mind recognition flashed, ironic and startling. He knew at last where he had seen that face. Kirk Hazleton was the boy who had shared his theft of the six cream cakes! [CONTINUED IN THE NEXT ISSUE]



Drake felt his reward had come when he led Faith to his mother

struck the right key and that Robert had responded.

"Ernestine has a right to the best man alive," he went on vigorously, "and it's her father's privilege to make you prove that you can measure up. You can, Robert, and you will."

"Then you think it would be right for Ernestine and me to—" It was a cry of triumph.

"I don't know," Drake interrupted hastily. "That's between you and Ernestine—and time. What I do mean is that you can make yourself worthy of any girl—and that's what counts. Of course I'll tell Cumnock that you thought his daughter knew."

Suddenly Robert shook his head. "No," he said slowly. "I'd rather you wouldn't, sir. You've done too much for me already. You've stood between me—and all the hard places, but—now—I've come to one I've got to cross alone."

Miss Fleming rapped to announce a business man come to keep an appointment. By the time he was gone Faith arrived, so it was three o'clock before Mr. Drake returned to the interrupted interview.

After a few minutes' talk William said, with such a beaming face that his protégé was mystified:

"Robert, I've just been talking to Miss Hamilton. She, Kirk Hazleton, Mr. Cumnock, and his daughter are coming to see me this evening. I want you too."

Robert drew a deep breath. He had never been asked to his employer's home before when there was to be company. It was a proof of confidence so touching that a hot, unmanly mist filled his eyes.

"It's awful—to be in—love," he finally choked, laughing, then growing abruptly silent as a man does.

Chapter XV.

MR. DRAKE truly felt that his reward on earth had come when he assisted Faith out of the Cumnock automobile that evening and led her to his mother.

In her white lingerie gown, with the pink roses he

How to Cook Without Eggs

By Mary Hamilton Talbott

WHEN each egg sold means the addition of four or five cents to the household purse the careful housewife is on the lookout for tasty dishes into which eggs do not enter. But one thing must be remembered in making cakes without eggs, a more thorough beating of the ingredients is necessary than when eggs are used, and in trying any of the recipes here given it is well to keep this in mind.

EGGLESS GRIDDLE CAKES—An eggless griddle cake is made by mixing one cupful of corn meal, scalded with one cupful of boiling water, two cupfuls each of flour and sweet milk, one tablespoonful each of shortening and molasses, one teaspoonful of salt, and half a yeast cake dissolved in a tablespoonful of warm water. Beat this hard and set to rise; if too thin in the morning add a little flour. A delicious imitation maple syrup to serve with these can be made by boiling until it thickens two cupfuls of brown sugar and one cupful of hot water.

ECONOMY POP-OVERS—It would almost seem as if eggs were necessary for successful pop-overs, but they are not. Mix one-half cupful of milk and one-half cupful of water, and add gradually, while stirring constantly, to one cupful of pastry flour once sifted. Beat with an egg beater until very light, then turn into hissing-hot buttered iron gem pans and bake thirty to thirty-five minutes in a hot oven. These may be baked in buttered earthen cups.

PORK CAKE—When one wishes to economize on both eggs and butter, pork cake will be found delicious, and no one would suspect that it is minus butter, milk, or eggs. Chop one-half pound of fat pork very fine, pour over it one pint of boiling water, and let stand until cool. Add three-fourths pound of raisins chopped fine, two cupfuls of sugar, one cupful of molasses, one teaspoonful of cloves, half a nutmeg, two teaspoonfuls of soda, and flour enough to make a little stiffer than ordinary cake. Bake in long, narrow loaves, and ice with an icing made from one cupful of sugar and two tablespoonfuls of milk boiled together until they will "hair" on the spoon, then taken from the fire and beaten until smooth. If this recipe is frequently used a pleasant change in the icing may be had by cooking together one cupful of dark brown sugar and one-fourth cupful of milk until a spoonful will form a ball when pressed between the thumb and finger. Beat this until it thickens, and add any kind of chopped nuts.

WATER CAKE—Water cake does not sound particularly appetizing, but it is in reality a very acceptable cake, though it takes neither eggs nor milk and very little butter. One cupful of sugar, one cupful of slightly warm water, two cupfuls of sifted flour, one-half cupful of butter, three teaspoonfuls of baking powder, and a pinch of salt. Bake in shallow tins and cover with any kind of icing, then cut into squares.

APPLE-SAUCE CAKE—When apples are as plenty as eggs are scarce an excellent eggless cake may be tried known as apple-sauce cake. The cup of sweetened apple sauce in this recipe imparts a particularly delicious flavor. Baked in two layers with an apple filling between and white frosting on top, no better cake could be asked for. To one cupful of sweetened apple sauce add one teaspoonful of soda, and beat thoroughly into one cupful of sugar and one-half cupful of butter which have been well creamed. Beat into this mixture one cupful of chopped raisins and finally one pint of flour to which a pinch of salt has been added. Bake in a slow oven. While this recipe calls for raisins the cake is very acceptable without them. If not used in the cake the raisins make an excellent addition to the icing when chopped fine. A lemon-jelly filling is well adapted to apple-sauce cake, the frosting also being flavored with extract of lemon or lemon juice.

COOKIES AND DOUGHNUTS—One thrifty home caterer whose little ones are always flocking to the box where the cookies are kept keeps this receptacle filled with very little expense. To one cupful of sour cream she adds one level teaspoonful of soda, a pinch of salt, one cupful of sugar and flavoring, and flour enough to roll. A few chopped nuts, which are a product of the farm, are sometimes spread over the top. And though most cake-makers consider that doughnuts must be made with at least one egg, this housewife has found by experimenting that if the quantity of shortening is kept at a minimum the doughnuts will be successful without the use of a single egg.

A NEW GINGERBREAD—Gingerbread, which is such an appetizing addition to the supper table, can be made in a most economical and delicious way. To one cupful of molasses add one-half cupful of boiling water. Sift together two and one-fourth cupfuls of flour, one teaspoonful of soda, one and one-

half teaspoonfuls of ginger, and one-half teaspoonful of salt, and add to the water and molasses. Four tablespoonfuls of chicken fat, tried out and clarified, is then added to the above mixture and the whole beaten vigorously, poured into a greased shallow pan, and baked twenty-five minutes.

COLD RICE PUDDING—In making rice pudding when eggs are scarce I mix together one quart of milk, three tablespoonfuls of raw rice, well washed, four tablespoonfuls of sugar, one tablespoonful of butter, and one-fourth nutmeg. This is baked in a slow oven for two hours, and stirred when a skin forms over the top until the mixture is quite creamy, then it is stirred no more. Served very cold, it is delicious.

FROZEN PRUNE PUDDING—Most recipes in which prunes are used call for eggs, but the following delicious pudding can be made without them. Add two cupfuls of cold water to a half pound of well-washed prunes and let stand for an hour, then bring to the boiling point and boil until soft, after which remove the stones and to the pulp add one cupful of sugar, a half-inch piece of stick cinnamon, and one and one-third cupfuls of boiling water, and let simmer ten minutes. Dilute one-third cupful of cornstarch with enough cold water to pour easily, add to prune mixture, and cook five minutes. Remove cinnamon, turn into a mold, and chill. Serve with cream.

Some Cocoa Possibilities

By J. E. T

NOT every housekeeper has the art of making delicious cocoa. Many say, "I do not make cocoa, for my family do not care for it." And it is not surprising that anyone should have small relish for the unpalatable beverage made by simply putting into a teacup a spoonful of cocoa and filling up the cup with hot water. To make really fine cocoa proceed as follows: Mix carefully four teaspoonfuls of cocoa and five generous teaspoonfuls of sugar. Add one pint of boiling water, stir well, and set where it will keep hot until you have brought to the boiling point in another saucepan four cupfuls of rich milk. Add the first mixture to the second and let remain over the fire until it boils up briskly. Then beat for a moment with an egg beater. Remove from the fire and pour into the serving pot. To each cupful, when poured, add a spoonful of whipped cream.

five minutes, leaving oven door ajar. Remove to serving dish, cut in squares, and put a spoonful of whipped cream on each.

E. H. D.

VEAL LOAF—Two pounds of raw veal, chopped fine, one small onion, one tablespoonful of salt, one tablespoonful of sage, one teaspoonful of black pepper, six crackers, three eggs, two tablespoonfuls of sweet cream. Mix well, make into two rolls, and bake in covered dish one hour, basting occasionally with a little boiling water containing butter. Uncover and brown. Serve hot or cold.

Mrs. J. W. H.

To FRY LIVER nice and brown and so it will not be hard, dip slices in sweet milk before frying.

Mrs. E. A.

WHEN BAKING A LOAF CAKE try dropping the pan, from a height of about six inches, smartly upon the table, just as it goes into the oven, to force the bubbles out, and you will not be annoyed by having the cake fall. To keep it from humping in the middle when baking, cut across it both ways, just before baking.

L. C. A.

DURING THE WINTER MONTHS, when breakfast foods are in demand, I take whole wheat and clean it well, then grind in a food grinder, using the finest burr. It takes but a little while to grind enough for one meal, but it must be fed in slowly or it will clog. It is cooked like other breakfast foods and is much better. It is also good if soaked overnight in water and cooked all the next day. Do this when used without grinding.

Mrs. E. S.

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Eat, Drink, and Be Merry!

POTATO DOUGHNUTS—Four large potatoes, boiled, mashed, and cooled, one and one-third cupfuls of sugar, two eggs, butter size of small egg, one-half teaspoonful of salt, four cupfuls of flour, four teaspoonfuls of baking powder, one-half teaspoonful each of cinnamon and nutmeg. Sift flour and baking powder and rub butter into them. Add sugar, potatoes, eggs well beaten, and spices. Do not add one drop of milk or water, unless you want tough doughnuts. These are really fine and do not taste of the potatoes at all.

J. V. K. B.

PLAIN DOUGHNUTS—One cupful of sugar, creamed with one tablespoonful of butter, two well-beaten eggs, a little nutmeg and cinnamon, one cupful of sour milk with one teaspoonful of soda stirred in, a little salt, and flour enough to make a soft dough. Roll out to a half-inch thickness, cut in rings, and have the lard good and hot.

The lard in which doughnuts are fried should be hot enough to brown a little piece of bread very quickly, and the cook should allow a minute for it to reheat between each lot of doughnuts. She should have a few thicknesses of soft brown or white paper to drain the doughnuts on after they are taken from the fat, and if she likes she may sprinkle them with sugar.

J. V. K. B.

SALMON CROQUETTES—One pound or one can of salmon, one teaspoonful of salt, one tablespoonful of chopped parsley, the juice of half a lemon, one cupful of cream, one tablespoonful of butter, three tablespoonfuls of flour, a dash of cayenne pepper. Chop salmon fine, add salt, parsley, lemon, and pepper. Mix thoroughly, put cream on to boil, rub

flour and butter together, stir all into the boiling cream, cook two minutes, and turn out on a dish to cool. When cool form into croquettes, roll in beaten egg, then in bread crumbs and fry in boiling fat. Serve on napkin, garnished with parsley.

BUTTER SCOTCH PIE—One cupful of brown sugar, melted, one cupful of sweet milk, one tablespoonful of butter, one tablespoonful of flour, the yolks of two eggs. Beat all together and boil until thick. Fill crust and bake, using the whites of the eggs for a meringue. This makes one pie.

ORANGE MARMALADE—One grapefruit, four oranges, one lemon. Use pulp of grapefruit. Cut oranges in small pieces, add juice of lemon. To this add three times as much water; let stand twenty-four hours. Cook ten minutes, let stand twenty-four hours, and again cook ten minutes. The third morning add measure for measure of sugar, and cook as you would jelly. This will make about a dozen glasses.

Mrs. J. A. T.

MARSHMALLOW GINGERBREAD—Melt one-half cupful of shortening, using butter and lard in equal proportions, and add one cupful of molasses, one egg well beaten, one cupful of milk, and two and one-third cupfuls of pastry flour mixed and sifted with one and three-fourths teaspoonfuls of soda, one teaspoonful of salt, and one teaspoonful of ginger. Turn into a buttered and floured dripping pan, and bake in a moderate oven twenty-five minutes. Remove from pan, and cut in halves crosswise. Spread one half with whole marshmallows, cover with the other half, put in oven, and let stand



Heloise and the New Year's Monitor

By Edith R. McCombs



HELOISE held the tea towel with a weary droop and stood first on one foot, then on the other.

"How I hate doing dishes! First the glasses—polish bright; then cups and saucers—careful not to break; silver next—do not scratch; then plates—how the grease sticks; and pots and pans—I loathe them!"

In an agony of disgust Heloise threw the dampened tea towel at the cat, and not deigning even to mop up the pools of water on the kitchen table dropped on to a chair, with mouth drawn down, in a fit of the sulks.

Heloise was eighteen, yet she was acting like a spoiled child of twelve. It was a kind of a pleasure to let one's self go once in a while. Fortunately there was no one around just now to be injured by having such an unpleasant companion. Only pussy, who had fled nearer to the stove, out of reach of tea towels, was contentedly washing herself with long stretches of her tongue.

"Oh, if I were only just a cat!" groaned Heloise as she looked enviously at her. "Then I would not mind anything. Only just to eat and sleep and purr in the sun—and life would be full and complete!"

The sun was dazzling as it shone over fields of snow and then streamed into the clean kitchen. It was the third of January, and her low spirits seemed all the worse in contrast to the gaiety and happiness of the season.

A Prisoner at Home

As our girl sat there gazing stupidly out of the window at the great white, silent stretches, the shrill whistle and rumble of a train cut the air. The station was only a few blocks away and she could plainly hear the sounds incident to her village's twice-a-day connection with the outside world. The heavy fall of baggage, the quick roll of wagon wheels, the cries of the conductor and brakeman, and then, presently, the ringing of the bell and the slow starting of the cars, gathering momentum as they passed along the track at the bottom of her yard and finally died into the distance with a hurry of machinery.

Only a faint line of smoke remained, which blew softly upward and melted into the snow mist. Heloise watched it stolidly and dry-eyed till it was all gone,

and then burying her head in her arms gave herself up to a passionate fit of weeping.

Was not the train carrying Helen Gilder, her best friend, back to college? It was not so much for lack of her friend that Heloise wept as for the fatal irony of fate which was keeping her from college.

She, who was much brighter than Helen, and had stood above her on graduation day at the high school; she, who had such dreams, who wanted to be famous and play a great part in the world, who nursed within her breast wild broodings of future greatness which would have startled the little town of X. had it been possible ever to disclose them to it—she was denied college!

Genius Puts on Its Thinking Cap

The bitterness of it and an anger against the conditions of life were very real to Heloise as she sat there. Her father, a country lawyer, could not afford to send her to college, nor could she be spared from home even should she attempt to earn her own way. There was no question about these things; it was simply fate that was against her.

She would stay in this village till the children were grown and no longer needed her, and her mind would become fallow and useless. She felt that her old keenness in study had already slipped away from her in the year and a half since she had left the stimulus of school.

The worst of it was, no one around her seemed to realize they had a genius in their midst. She was only an ordinary girl, keeping house for her father; perhaps more quiet and less understandable than the general run of girls, that was all.

But Heloise was not left long to brood. Soon the children came stamping in, and there was dinner to get, and the house to straighten, and a thousand other things to do. With apathy she went through the daily routine, and it was not till the late afternoon that she found time to take a little stroll through the town for variation, and to get away from the house where uncomely thoughts had been pounding in her ears all day.

Her way led her down through the main street of the little town, past the dingy shops and quiet cottages, and out on the soft, white country road. Every-

thing seemed so prosaic and so unsuggestive of a career. Heloise's heart burned and ached within her; yet something seemed to say to her, "Is there no way in which you can help yourself? Think things over, and let us come to some conclusion."

So, led by this inner Monitor, she began to think, to add up her debit and credit column.

"First, in the way of blessings, I suppose I must count the children. They are a care, but so dear—and how I should miss them if I went away! And Father, he is often abstracted and seems not to notice what we do. Yet I know if it were not for us—and for me in particular—his life would be much more somber than it is. It is quite a career, I suppose, to be able to cheer up Father."

But the debit column surely claimed the housework. "Yet," mused Heloise thoughtfully, "how I have longed to take a course in domestic science if I could go away." And here her truthful Monitor showed her in a flash the dozen or more cook books piled up in a pantry drawer; the housekeeping magazine which came every month stored with the best home-making brains of the land; and, yes, there were all those chemistry books in Father's library. She might mark out a course for herself and learn to cook scientifically instead of in the slipshod way she had been doing in the hurry of night-school work.

"But housekeeping, even at its best, won't develop my higher faculties, and I meant to be a writer, and a musician, and—"

Heloise was walking very slowly now, and looking straight ahead of her. Her eyes were very bright. The inward Monitor saw its chance.

Conscience Gets Its Spectacles

"Heloise," it remarked steadily, "you know very well that you have a perfectly fine piano which you do not open from one week's end to the other; and a set of splendid new music books that Father got you Christmas, full of hundreds of pieces by the best composers, which would be an education to you if you would practice reading them by sight just one or two each day during this new year, to say nothing of the volumes of musical biography you have not even glanced into yet."

"And—and there is that new set of Rnskin in the library—and those old histories you have always been waiting for a chance to study. And, yes, Father has some new books on psychology and philosophy—and there's a good encyclopedia in the library—"

"And all your old textbooks in French and German you know you never did justice to—why, my dear girl," continued the now hopeful Monitor, "there's an education for you right there in that house, and right here in this town, if you choose to see it. Talk about college, and travel—what's the use of trotting about from place to place if you have never learned to use and appreciate your own faculties? It is concentration of thought and will that does the business. Salvation comes from within, my dear, whether you are here or in college with Helen."

The Reward of Wisdom

Heloise wheeled about and turned suddenly homeward. By the time she reached the dear old place she had mapped out a course of training for herself. So much music and science, so much literature and cooking, each day. Suppose the latter *did* demand three sessions! To the practical Heloise in her new scheme of things this seemed quite fair.

The winter passed into spring and spring into summer. Heloise had made a college of her home, and by training her mind to be its own teacher she had added several other qualities, such as self-reliance and originality, to her mind, which was naturally studious.

She was sitting on the porch under the blooming roses, looking over some advertisements for a correspondence course she was intending to pursue. The children were in bed. Her father had put down his paper and was looking at her thoughtfully. Then he said:

"Daughter, it seems to me you have improved a great deal these six months. I don't just see how you have done it either, with all the work."

Heloise responded brightly. "Yes, Father, I know I have. The Monitor came two days after the new year."

Father looked somewhat mystified and turned again to his paper, but the Monitor shook hands with itself.

The Difference in Hogs—By John Y. Beaty

IF YOU boys have pure-bred hogs on your farms, you are interested in the points about them that make them worth more than scrubs. And if you don't have pure-breds be sure to read this article, and then see if you don't understand the reason why men who keep pure-breds are more prosperous than those who do not.

There are six important breeds and several minor breeds. The six most prominent breeds in our section are: Poland China, Berkshire, Duroc Jersey, Tamworth, Chester White, and Yorkshire. The first two are black, the next two are red, and the last two are white.

Two of these breeds, the Yorkshire (white) and the Tamworth (red), are what we call "bacon breeds." They are called bacon breeds because they produce such a large amount of bacon. I suppose you all know what bacon is, for you have it with your eggs for breakfast. But how many of you could put your hand on the part of the hog where the bacon grows? And how many of you could tell just how much of the hog is made into bacon?

If you will look at the picture on this page of the white hog you will see the bacon marked. The rectangle shows the size and shape of it. The white hog is a Yorkshire, one of the bacon breeds.

Now look at the picture of the black hog. Compare the size of the bacon on the black hog with that on the white one and you will see why the Yorkshire is called a bacon hog.

The black hog is a Poland China, and the Poland China is one of the lard hogs. He produces more fat than the Yorkshire or Tamworth. He does not produce so much bacon, however, because his sides are not so long nor so deep.

Take particular note of the ham and shoulder on the white hog. Then, with your pencil, outline the ham and shoulder of the black hog. The ham always brings a good price, and the hog with a well-developed ham sells for more than the one with a ham that is not filled out. The shoulder is usually sold as a ham too. Usually they call them "picnic

hams." You will see that it is about the same shape as a ham but is not so large.

The part of the hog on top of the two hams is called "rump." It extends up to the point shown in the picture. Then



A Yorkshire (bacon breed)

outlined on the Poland China; see if you can mark it on the Yorkshire. When you go to the pen get close to one of the pigs and scratch him so he will stand still. Then feel of the flank. You will see



Poland China (lard breed)

comes the loin. The back, you will see, is rather short, for it does not include all of what we commonly think of as back. On the lard hogs a long back is not desired, but on the bacon hogs, the longer the back the longer the bacon, and the bacon is the important part in bacon hogs. Can you tell the names and the color of the bacon hogs without looking?

There are three parts of a hog that are not worth much for meat. They are necessary, of course, but in picking out the best hogs we always choose those with these cheaper parts smallest and the more valuable parts well developed.

The three parts of least importance are neck, flank, and belly. We might also include the head and the feet, but they will be treated by themselves.

The neck is usually short. You will see that even on the long Yorkshire there is very little space between the head and the shoulder. The lines in the picture mark the neck, which is a very narrow strip. The meat of it is rather coarse and not arranged so that it makes an attractive dish when cooked. If you draw lines on the picture of the Poland China you will see that he has even less neck.

The flank is the flabby part on the side, just in front of the pig's hind leg. It is

that it is mostly skin. There isn't much meat there. What meat there is you would find to be rather tough and in thin layers if you cooked it.

The belly is the under side of the hog, and, although it has more meat than the flank, it, too, is poor in quality.

I wonder if you can determine just what kind of hog would have the smallest flank. If you think hard, study the pictures, and examine the pigs in your pen, you will see that the pig with the most bacon and with the plumpest ham has less flank than the others.

If you were to pick out the pig in your pen that is best of all for pork, you would first decide whether you were selecting for the bacon type or lard type. If for the lard type, you would pick the one with the largest and fullest hams. You would look for hams that were filled out well down to the hock. (The hock corresponds to the knee on the front foot.) You would look for hams well rounded out behind. You would select for the plumpest shoulder, the shortest neck, the widest back, the squarest rump, and the smallest flank.

If you were choosing for the bacon type you would take the hog with the largest bacon, although you would also look for well-developed hams and shoulders. There isn't much meat on the head,

but it is good when made into head cheese. It isn't worth much, and we must consider the head as being largely waste.

There are some important things to know about the head, however. Every one of the six breeds mentioned in the beginning of this article has a different type of head. The head is characteristic of the breed; and that means that we can tell the breed by the head.

Study the head of Mrs. Yorkshire in the picture. See what a peculiar shape is her nose. It turns up sharply at the end, which makes her have a *dished face*. There is only one other breed that has this dished face. That is the Berkshire. You can easily tell the difference between a Yorkshire and a Berkshire, can't you? Who can tell me how? By the color, of course. A Berkshire is black.

Notice the ears of Mrs. Yorkshire. They point straight forward. *Erect ears*, we call them. The Berkshire has erect ears too, but they stand straight up instead of pointing forward.

Follow the black line that runs along the lower jaw. This marks the *jowl*. Every hog of every breed must have a plump jowl.

Now study the face of Mr. Poland China. His nose does not turn up at all. We say that he has a *straight face* or *snout*. All the others of the six breeds, except the Yorkshire and Berkshire, have straight snouts. The Chester White has a short snout, and sometimes it is just a little dished, but not so prominently as the Berkshire.

You can easily tell the Chester White from the Poland China because it is white. The Duroc Jersey is red, and the Tamworth has such an extremely long nose that you never could mistake it for any other breed.

See how the ears of the Poland China droop. They almost entirely cover his eyes. These are certainly distinct from those of the Berkshire. Notice all the hogs you see from now on, boys, and see if you can name all the parts properly. Also study the different breeds. You ought to be able to tell them apart, and you ought to be able to pick out the best pig in the pen, no matter what the breed.



The only light he had

How to Grow Wise While the Clock Ticks

By Earle William Gage



Hugh Miller, geologist

Uncle Ike on the Initiative

By John Brown Jewett

THE only way beneath the sun
To get a piece o' labor done,
To build a fortune or a fence,
Or tear 'em down, is—to commence.

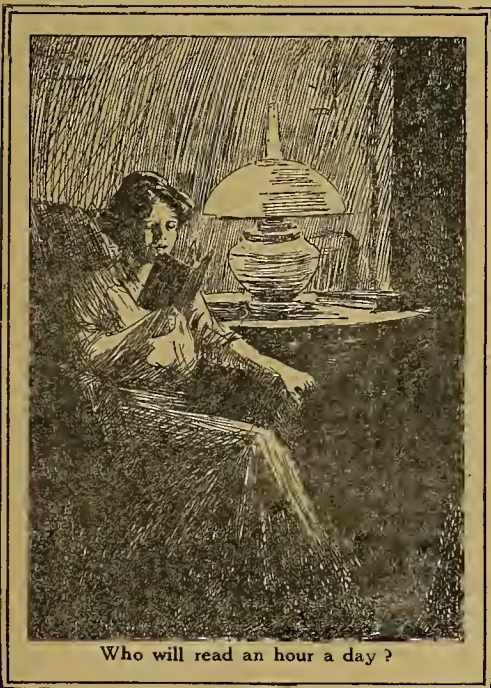
Nigh all the jobs that don't get done
Are those that never are begun;
Comparatively mighty few
We see begun and not put through.

Most people whom we say have failed
Are like a ship that's never sailed;
They claim that all their plans went
wrong—
They never got that far along.

For nothing can go wrong or right,
Go in too loose, go in too tight,
Come out too big, come out too small,
That doesn't come or go at all.

And therefore, I may farther say,
You'll always find the likeliest way
To get your rightful recompense
For bein' done, is—to commence.

MANY a lad toiling to-day on the farm longs for a higher intellectual culture, and spends hours dreaming over what he might be and do if he only possessed an education. The larger portion of these sons of the legion of toil long and dream, but do not make an effort to advance themselves. The



Who will read an hour a day?

majority fail not because they lack the talent to secure an education, but because they have not the energy to develop their natural resources.

To-day there is hardly a young man or young woman who has not a leisure hour in every day which might be given to reading. If he will faithfully improve that hour he will surely make great progress in intelligence. The word *improve* implies that he read fine, true books. The young might as well endeavor to nourish their bodies on chaff as to enrich their minds by reading poor, unwholesome literature.

A shoemaker's lad in Vermont, when he was fourteen years of age, formed the resolution to read one hour every day, and he has followed this resolve for more than thirty years. During this period he has mastered, without a father or teacher, the whole science of mathematics, has made himself familiar with natural sciences, collecting and arranging a beautiful zoological cabinet, besides various herbariums which take rank among the finest collections of the particular type in the United States. Particularly fine is his collection of ferns. He is an excellent astronomer, a good Latin scholar, and is at home in general literature. He has collected a large library by being frugal in his other expenditures, and in it he ever finds new sources of delight and thought. The range of science and literature is sufficiently wide to

occupy all of a man's short lifetime, and no doubt, with all his acquirements, he feels that he is just launched on the great sea of knowledge.

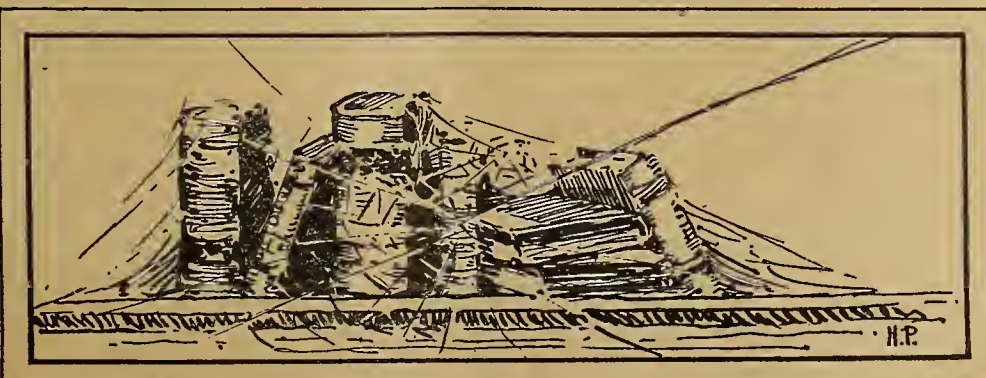
In our first year books we are accustomed to write, "What man has done, man may do again," and it is worth remembering all the days of our lives. You can hardly limit your personal ability if you only have perseverance and energy of purpose. Half a resolution never accomplished anything for anybody. No matter how great your difficulties, you can master them if you only have the spirit necessary for the task.

A poor lad was accustomed to take his book in the street and read before the brightly lighted shop windows; and when the shops were closed, rather than give up the enjoyment, he would climb up the street-lamp post and hold fast with one hand while he held the book in the other. Now, there is not a boy or a girl who reads this who is too poor to have lamp or candle light for one hour in the evening at his or her own home.

William Cobbett, who afterward became so distinguished, was obliged to labor under even greater disadvantages. He was a poor soldier living on twelve cents a day, and most of his studying, he tells us, was done with the edge of his guard bed for a seat, his knapsack for a bookcase, and a board lying across his lap for a desk. He could buy no oil or candles, and had to take his turn at reading by the camp-fire. To buy a pen and a sheet of paper, he was obliged to go without a portion of food, though almost starving, and all his studying was accomplished in the midst of a company of soldiers forever talking, singing, or whistling, and that, too, at any odd minutes he could manage to pick up. Will you ever think again that you have no advantages for improving your minds? If you wait for everything to become smooth and easy before you, life will all slip away, and you will never have accomplished half your Creator designed that you should. He places difficulties before us for the very purpose of trying our mettle, of teaching us our personal strength or weakness. He knows when our efforts are successful and we overcome seemingly insurmountable difficulties; and He grieves when we allow sloth to bind us with its fetters.

Robert Bloomfield, who occupies an honorable niche among the British poets, was a poor shoemaker's apprentice, and by improving his spare moments became well stored with intellectual riches, poor as he was in other respects. It did not seem very likely, as he used to bend over his lowly bench, pegging away at his humble occupation, that one day he would become the companion of the most learned and respected men of his country. If we faithfully make the most of our abilities the Lord may prepare great things for us.

Who would have thought when they looked on Hugh Miller toiling for his daily bread in a stone quarry, dealing blow after blow upon the hard rock as if he had no thought in the world beyond the present task, that the wisest and the greatest men of the world would delight to sit at his feet as humble learners; that they would come to regard no praise too high, no honor too great, to bestow upon his head? When he was a boy he knew no more geology than the average lad of to-day, but he studied during all his spare moments. The lads of to-day, as well as the older folk, have this selfsame opportunity at hand. We may all become geologists, or botanists, or astronomers, if we only possess will-power and industry. We shall never be anything or do anything if we waste time. Let us learn to be miserly of the precious minutes which are passing.



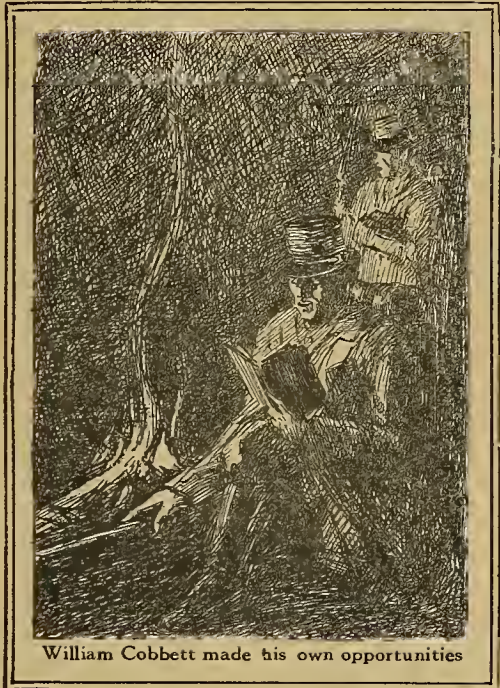
H.P.

What you read in these years is of great importance, and as your own judgment may not prove the safest to pursue, it will be well to ask the advice of some literary person, such as your teacher or parents. Still it is important to consult your personal taste, if that has not become perverted by reading common works of fiction, which so many of the present day have come to call "literature." If this be the case, and you are wholly unwilling to give up, to break away from the chains that hold you fast, you had better, at the very outset, abandon hope of becoming a lover and reader of true literature. Literary attainments are not for this class of people.

Parents should never forget that the first books the child reads will be remembered until the last day on earth. These first books! They are often the molders of character, and they frequently determine the course of the adult life.

The end of all study is to attain human sympathy and understanding, and a thorough knowledge of Christian truth is the most essential of all possessions. Unsanctified wisdom is not worth the getting. Let a portion of your reading time be given to the most sacred of all books.

Who is ready to form the resolution of reading one hour a day, and to carry it out faithfully for the year on which we have entered? Read one hour a day pure, fine literature, and your life will be thoughtful and happy, and you will be able to aid yourself and others to



William Cobbett made his own opportunities

reach a higher and more desirable standard of thought and living.

After Christmas

By Rose Seelye-Miller

"DO IT NOW." What? Why, acknowledge the favors you have received during the holiday season, whether they were really gifts, letters, cards, good wishes, or invitations. It is a graceful as well as a grateful custom to acknowledge favors received at any time, but to neglect acknowledging a gift or favor during the holiday season is to have this season shorn of its choicest joy. Haven't you thrilled to get a word of thanks for something you have given or done? Hasn't your heart warmed more to the recipient of your favor who wrote such a word, than to the giver of a real gift to yourself? Well, then, go and do as you'd be done by. There is no excuse to palliate neglect of this thing, this joyous, happy expression of gratitude. Even though the thing you received was not exactly that which you would have selected, still it is certainly worth a grateful recognition and a reply.

Supposing the person who has sent you a gift does owe you a letter, supposing you are not in the habit of corresponding, that does not lessen your obligation to let her know you have received the thing sent, and that you have given it due appreciation.

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The Old Man from Nowhere

By Don Cameron Shafer

HE CAME swinging easily along the dusty, brush-fringed highway in the hush of early evening, a gaunt, sharp-visaged ancient. But, despite a hoary look, his limbs were straight and supple, and he stood well erect. The ironwood staff he twirled so merrily in knotted fingers was more of a companion than a servant to his years. The evening breeze tossed the patriarchal beard and the yellow-white ends of long hair which curled over a worn coat collar. I remember that the worn, coarse shoes and the frayed trouser-legs were yellow with the fine dust of the road, that his coat was somewhat tattered and out of shape, that a cotton shirt gaped wide over his hirsute throat. But, withal, he whistled blithely some old-fashioned tune of long-ago youth.

Strangers were so very scarce in our neighborhood, even vagabond strangers, that, boy-like, I ran down to the road to watch the curious old man fill the half cocoanut-shell at the noisy watering-trough. He drank the sparkling water slowly, as one would drink rare wine, ending with a loud smacking of his bearded lips and a deep-throated, contented "ah!"

Then came my Uncle Truman from the barn, with two foam-crowned pails of milk in his hands, and stopped to inspect the stranger.

"My friend," greeted the vagabond, "could I purchase of you a little food?"

Always slow and careful in his ways, my Uncle Truman looked the old man over very deliberately, from dusty shoes to battered black hat. My uncle's face was cold and stern, perhaps forbidding if one did not know his heart and nature, and his voice was ever harsh and domineering.

"Ask the women-folk at the back door," he suggested gruffly. "Perhaps they will give you a hand-out."

At this the vagabond burst into hoarse, rollicking laughter, as though my Uncle Truman had perpetrated a huge joke, something he never did under any circumstances.

"My friend," chuckled the aged stranger, "I would have you know that I walk merely for the love of it; for the happy surprises which confront me at each turn of a new road: for the smell of the dank wood in the morning and the perfume of the flowery fields at noontide; for the sweet melody of the birds and the soft whisper of the leaves at evening; for the gentle winds which fan my cheeks and the rich panorama of hill and dale, of water and sky, of deep valleys and great green hills. I have life and sweet content, and such humble fare as I need, such substance as my poor body requires, I am able and willing to pay for, and have no need to beg."

"Huh!" grunted my Uncle Truman rather doubtfully.

"Ha!" chuckled the stranger, tossing a bright silver half-dollar into the air and catching it in his great brown fist.

"Wash up and we'll have supper," answered my uncle, for strangers were always welcome at his home. "You can talk of payment afterward."

Now my Uncle Truman believed in a long and noisy blessing and a short and silent meal. When the stranger at our table attempted to make conversation he was duly warned by a dark frown upon my uncle's face, and he quickly took the hint to eat in silence like the rest of us. When the solemn meal was over the two men, with pipes aglow, lounged low in the wide porch bench behind the rustling vine, through which filtered the red light of the dying day, and talked as men will. And, as I had been taught that little boys should be seen and not heard, I sat back in the shadows, my bare feet under me, and listened.

"We are poor, but honest and hospitable," answered my Uncle Truman when the stranger spoke about paying for his supper.

"You are rich," answered the stranger.

"You have all this land, with trees and flowers, fields and wood and a broad view of the valley fringed with mountains and a little river nestling at its feet."

"We are poor," repeated my uncle. "Farming doesn't pay any more."

"Ha!" cried the vagabond. "What seems to be the trouble?"

"There's the land," nodded my uncle thoughtfully. "It's getting worse every year, regardless of how much I feed it. There's the question of help. A farmer can't get help any more. Men want all pay and mighty little work. When a farmer has to hire things done it costs two dollars for everyone he gets. The boys don't want to stay on the farm. Even the women-folks won't work like they used to. Things don't grow like they did when I was a boy. The times are bad—very bad indeed."

"Hum!" interrupted the stranger. "I've traveled many a weary mile in my day." He stroked his white beard very thoughtfully and twinkled his little dark eyes at me. "I've taken my foot in my hand, oh, many and many a time, o'er mile and mile, and I've heard hundreds of farmers express those very same views."

"We're all in the same boat," my uncle cried in some heat. "All getting poorer and poorer each and every year. There's no money in farming now. When I was a boy things were different."

"And then again," interrupted our guest, "I've seen farmers who make money. There's the man just below you—"

"His father left him rich," snorted my uncle in disgust.

"But he makes money," nodded the stranger.

"He does," admitted my uncle bitterly. "Anyone can make money with money. Them that has, gets, as we say in these parts."

"And I passed a nice fruit farm down by the crossroads this morning," began the vagabond.

"A Dutchman from the Low Country who is as much at home in the trees as a monkey. He isn't a farmer."

"And there's a nice truck farm just below him."

"Run by a Dago," answered my Uncle Truman. "Those Dagos would make money on a sand-bar. They can live all winter on a box of dried herring and a bushel of carrots."

"And there's a mighty prosperous-looking dairy farm on the Conklinsville road." "Huh!" grunted my uncle. "He goes in for fancy stuff—high-priced bulls with gold rings in their noses, cows with parlor stalls and all that stuff."

"And making money at it," nodded our guest.

"But it isn't farming," argued my uncle.

"But it gets the money and is therefore a success."

With this my Uncle Truman removed the pipe from his lips and fell to staring at our strange guest. I knew that, however anxious he might be to air his petty grievances against farming to a sympathetic listener, at heart he was proud of his vocation and resented any implication that he was not a successful farmer.

"The true farmer—" he began with due emphasis.

"The true farmer," nodded our guest, "is making money and is wholly satisfied with his life's work."

"Making money!" cried my uncle, jumping to his feet so quickly that the sparks rained from his pipe. "Why, man, we farmers are all bound hell-for-leather

toward the poorhouse. Not one of us old-time farmers is making a cent. It's all we can do to make both ends meet, and some of us don't even do that."

"Old-time farmers," repeated the vagabond, rolling the phrase richly on his tongue. "Old-time farmers!"

"Yes, old-time farmers—farmers that were farmers, like my father and his father before him," stormed my uncle, pacing back and forth. "They knew how to farm it—they had no troubles with help, prices were right, the land was right, farming was right. The rich men of the cities may come and putter with the earth, sinking five dollars for every one they take out; the college boys can come with their whims and fancy-work; the Dutch can swing in their apple-trees; the Dagos can grub onions and strawberries on their calloused knees; crazy folk can monkey with fancy stock and pedigreed fowls if they want to—but it isn't farming. It isn't plowing the sod and sowing the grain; it isn't planting, harvesting and thrashing; it isn't farming. It—"

"But it makes the money," interposed our guest, more exasperating than ever.

"I'm not so sure about that," snorted my uncle in disgust, as he sank back to the bench. They claim to be making money—but are they? It is easy enough to mortgage a farm for an automobile."

"So it is, my friend," answered the stranger very gently. "And I would advise no one to make a show of imaginary wealth. I have been through the mill, and I know whereof I speak. When I moved to the city," he began, "long, long ago, to seek my fortune, I was firmly convinced that farming did not pay. I had tried it and failed. I could do almost anything and do it well, except farming. There was room for me in the city in those days, which are no more, and I readily found work. Almost the first thing I learned was that I really did not know much about work. I had a smattering of many trades, as so many farmers have. I knew a little about many things and had no definite knowledge about anything. In the factory where I was employed as a machinist I had to specialize and learn a trade. I learned to run just one machine and to make just one certain part of a steam-engine. For years and years I did this one thing, until no man could do it better or quicker. I paid no attention to the other machines. I ignored their very existence, studying the while ways and means to eliminate lost motion, to turn out more of those pieces each day so that my weekly salary would be larger. Of course I had my troubles, plenty of them; but I specialized and succeeded."

All about me in the crowded city I found men specializing in their particular branches of work. All the trades, as well as the professions, have their specialists. Specialize is the watchword of success, the hope of the future."

"And so you would have farm work specialized!" laughed my Uncle Truman mirthlessly. "You would apply city methods to the farm. You—"

"Just that," said he, rising and knocking the ashes from his pipe. "Sum it all up in one word—specialize. Look about you, my friend, the farmers who are succeeding, who are making money, are all specialists. They do not try to learn all there is to know about farming, they are not content with a smattering of knowledge about the thousand and one branches of the great agricultural industry. They concentrate—they specialize—they succeed."

"Sir! Sir!" gasped my uncle, rising in wrath.

"Do you mean to imply—"

"I make no implications," answered the vagabond from the lower step, as he whirled the bright half-dollar aloft and let it fall jingling to the weather-beaten floor of the porch, where it danced merrily in the darkness before coming to rest at my uncle's feet. "There is payment for your supper, and I thank you for your hospitality."

"Specialize!" cried my uncle harshly as he watched the dancing silver come to rest. "Specialize—be a Dago!"

With a muffled oath he kicked the shiny bit of silver out into the yard, and the next instant he jumped after it, as though to fling it into the grinning face of our mysterious guest. But when he turned about the vagabond had quite vanished, like some ghostly gnome of night. And, although my uncle ran up and down the dark highway calling after him, there came no answer, except the hoarse cry of the circling night-hawks and the eerie laughter of a screech-owl.

"Specialize!" puffed my Uncle Truman, as he dropped down on the bench and puffed clouds of smoke at the moths flitting about the vine. "Failure! What does a hobo know about farming!" But the bright half-dollar lay warm in his calloused palm to rebuke him for the epithet. With a snort of disgust he flung the coin to me, and I stored it away in my pocket.

And though he sat there in the night very silently, pulling at his pipe, I knew that he was arguing pro and con with himself, weighing every prophetic word the white-bearded patriarch had uttered. And, of a truth, I knew instinctively that the verbal shafts had gone home. My uncle's knowledge of farming was mostly hit and miss, here and there, without accurate and complete knowledge of any branch of agriculture, although he was rated as a good farmer in that community. And so we sat there in silence, brooding about the stranger and his message, until it was bedtime for man and boy who have hay to make on the morrow and the sky promising a fair day for the work.

"Wife," began my uncle after supper the next evening, "I have been a farmer long enough."

"I for one do not want to move to town," she remonstrated, lips trembling. "We are making a living here, if nothing more, and I am content."

"We will stay," said he, "and make more than a living."

"You work hard enough now, Truman."

"I shall work less," said he, "and study more."

"Study?" she cried, and in truth this word was very new and strange to her.

"Study," he nodded, as though it was all very familiar. "Study and—specialize."

"Specialize!"

"Yes," he admitted without shame. "Like Harden on his blooded-stock farm; like DeMarco in the asparagus and strawberry beds; like those Hollanders in their orchards."

"Specialize on what?" she asked timidly.

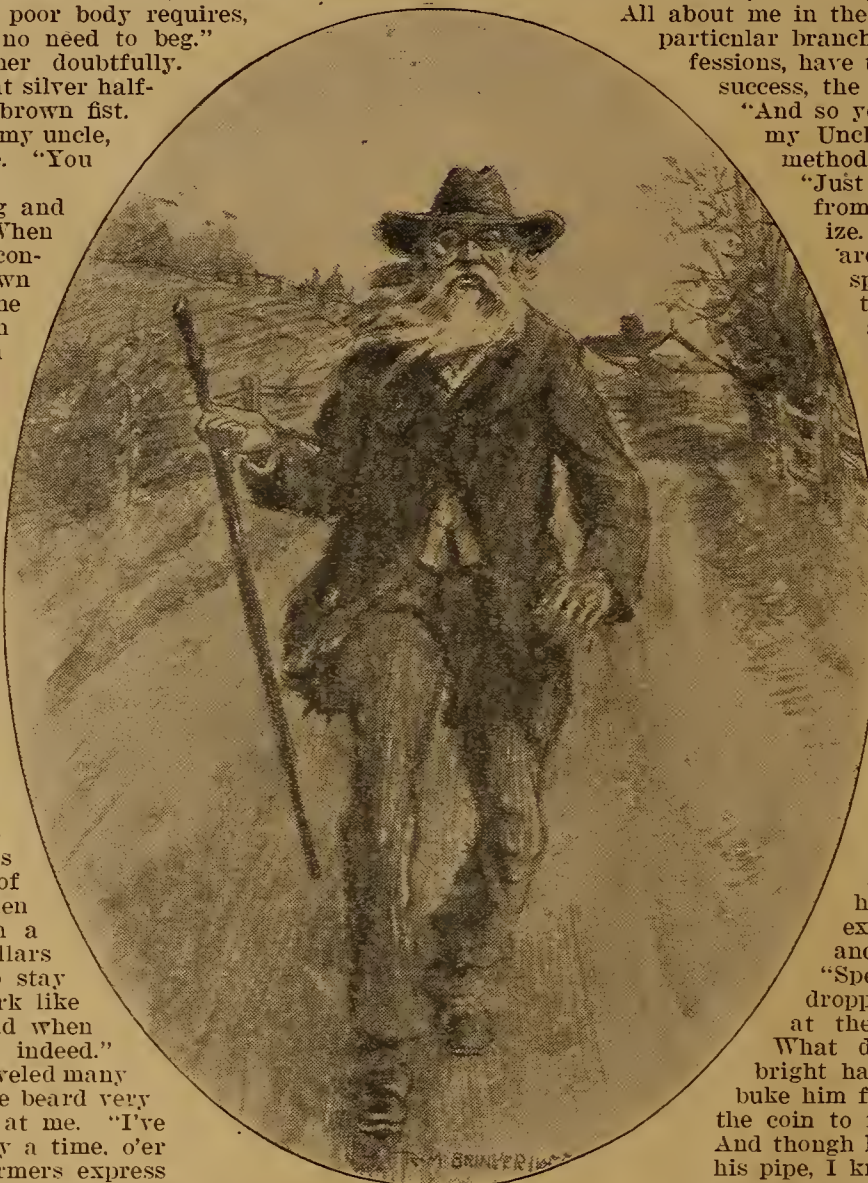
"That's just what I must decide," he answered.

And then he must tell her in detail about the strange old prophet she had fed, of the shiny half-dollar and of his gentle rebuke at our farming methods, coupled with a mild suggestion that we specialize on some particular branch of agriculture.

"But where will you study?" cried my aunt.

"Right here," he answered firmly, "and as soon as I can get started. It is not necessary to go to college: a school is but a place to study, and my home is as good a place for that as anywhere else. I can get all the books and study them here."

"Books! What books?" Her face was awe-struck. [CONCLUDED ON PAGE 25]



He came swinging easily along the highway

Smart Dresses and Waists for Winter Wear

And a Helpful Dressmaking Lesson on Outdoor Clothes for the Little Girl

THE little girl's outdoor costume is always an important one, and every mother wants to have it as attractive as possible. This lesson plainly tells just how the coat, hat, and muff, patterns for which are included in No. 2440, may be easily and successfully made.

There are a number of materials which may be used for this outfit. The coat may be developed in heavy coating material and made without a lining, or of serge, worsted, or corduroy with a lining. The collar and cuffs should be of contrasting material, velvet, satin, or plush, and both the hat and muff may be of the same material. The trimming on the muff may be of the coat fabric, while tiny satin flowers make a pretty finish for both the muff and hat.

Do not let the fact that there are twenty-three pieces in the pattern envelope—six belonging to the hat, fifteen to the coat, and two to the muff—trouble you, because each piece is lettered and very easy to identify.

In cutting the outside parts of the hat place the edges marked by triple crosses (XXX) on a bias fold of the material.

Place the pieces of coat and muff with edges marked by triple crosses on a lengthwise fold of material, and the other parts, also the patterns for buckram frames, with the line of large round perforations in each, lengthwise of the goods.

To make the hat, lap the edges of the buckram crown and brim one fourth of an inch, matching notches in center front and extreme ends. Cut the lapped edges at close intervals to make them fit correctly. These slashes must not be more than one fourth of an inch deep. Wire the upper edge of crown and outer edge of brim. Lap the ends one fourth of an inch and tack securely.

Join back seams of upper brim and under facing as notched. Triple perforations indicate the right side of each piece. Arrange upper brim on buckram brim, bringing outer edge over the buckram three eighths of an inch. Catch-stitch this firmly on the under side of brim. Tack upper edge of the velvet brim to buckram crown. This edge does not reach to top of crown. Run a line of bastings on brim along line of small round perforations, matching a similar line on buckram brim. Then stitch on the bastings.

Turn in the outer edge of facing three eighths of an inch. Pin it to under edge of buckram brim to cover edge of velvet brim, and slip-stitch to position. Tack upper edge to under side of buckram crown. Gather full crown at outer edge, and fold at ends between double crosses. Arrange crown on hat with edge at line of large round perforations on brim, and match centers of crown and brim, back and front. Bring single large round perforation in crown to left side.



No. 2440—Set of Child's Patterns, Including Hat, Coat, and Muff

2 to 10 years. Material for coat in 8-year size, one and five-eighths yards of fifty-four-inch material, with one-half yard of velvet for collar and cuffs. For hat, one and three-fourths yards of twenty-seven-inch velvet on bias and one-half yard of buckram. For muff, five eighths of a yard of velvet, one fourth of a yard of satin, five eighths of a yard of lining, and two yards of lace edging. The price of this set of child's patterns is ten cents

Sew flowers at left side of hat at large round perforations. Tack one end of the fold under the flowers, drape it around the lower edge of full crown, and fasten in a knot at left side (over the stems of the flowers). Turn up left side of brim at the line of stitching which is on the upper brim. Line the hat.

To make the coat, join the pieces by corresponding notches. Gather front and back of the waist portion and back of skirt between double crosses. Join front of skirt to lower edge of waist front. Join under back belt to lower edge of waist back. Keep the gathers in the back of waist and skirt portions near the center. Join back of skirt to lower edge of under back belt.

Turn in the long edges of bow and strap three eighths of an inch. Press, and catch-stitch to position. Join notched ends of each piece and bring these seams to the center on under side. Slip strap over bow and sew securely. Line belts. Join bow to back belt.

Arrange the side edges of front and back outer belts on fronts and back of coat, matching notches and edges. Baste along lines of small round perforations.

After the waist and skirt portions have been joined, adjust the wide under-arm gores. Turn in side edges of these gores at lines of small round perforations and baste three eighths of an inch in from the edges. Arrange on fronts and back of coat, matching notches, and bring edges to lines of small round perforations. Stitch to position through lines of basting.

Join front band to edge of right front. Join collar to neck. Join upper and under sleeve, easing the upper slightly at elbow between notches. Join cuff to lower edge of sleeve.

Place front seam in sleeve at notch in front of coat and bring notch in top of sleeve to shoulder seam. Sew three hooks on right front of waist portion at the seam which joins the band to front edge. Sew eyes on edge of left front at same places, and hook front.

If the coat is made of heavy cloaking, bind all seams neatly. If the coat is to be lined, cut lining like outside and make as directed for outside. Hem front and lower edges together, also neck edges. Baste armhole edges securely. After sleeves have been put in the armhole, hem sleeve linings over armhole. Tack lining and coat together at upper and lower edges of under back belt, also at seams which join front of waist and skirt portions.

To make muff, join seams as notched. Interline with sheet wadding. Cut interlining three-eighths inch narrower than muff at sides. Turn side edges of muff over edges of interlining, and stitch. Finish side edges of lining with lace frills. Face edges to lines of small round perforations. Hem outer edges of facing to lace frills; baste inner edges to lining. Arrange muff over lining, matching center lines of large round perforations in both pieces. Stitch muff sides to facing; trim.



No. 2412—Surplice Costume Blouse: Broad Collar

32 to 42 bust. Material for 36-inch bust, two and one-fourth yards of thirty-six-inch material, five eighths of a yard of thirty-six-inch all-over lace, three eighths of a yard for vest, and one-fourth yard satin for girdle. The price of this pattern is ten cents



No. 2449
No. 2450



No. 2392
No. 2393



No. 2358—Surplice Waist with Guimpe

32 to 42 bust. Material for 36 bust, one and three-eighths yards of fifty-four-inch material, with one yard of contrasting material, and seven eighths of a yard of net. Price of pattern, ten cents



No. 2392
No. 2393



No. 2412



No. 2358



No. 2449
No. 2450

No. 2449—Yoke Waist with Single Rever

32 to 44 bust. The price of this pattern is ten cents

No. 2450—Five-Piece Skirt: Foot Plaits

22 to 34 waist. Width of skirt at bottom in 24-inch waist, two yards, including the plaits. The price of this pattern is ten cents

No. 2392—Waist with Double Collar and Cuffs

32 to 46 bust. The price of this pattern is ten cents

No. 2393—Three-Piece Skirt: Side Closing

22 to 36 waist. Width of skirt at bottom in 24-inch waist, one and three-fourths yards. The price of this skirt pattern is ten cents

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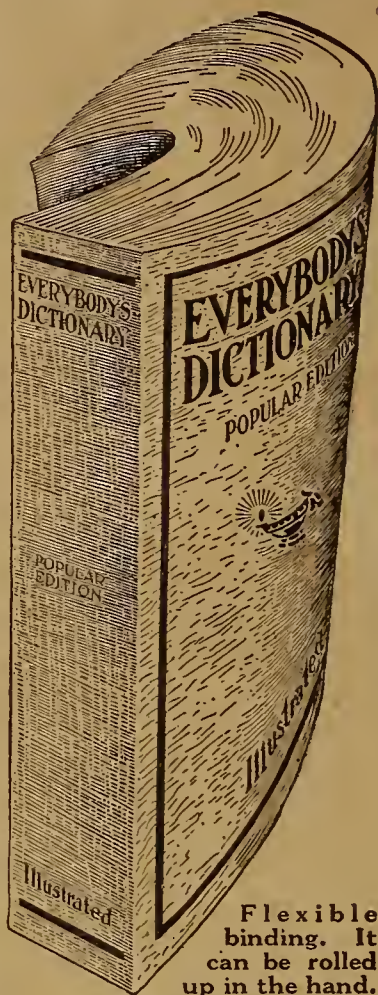
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Wedding Anniversaries.

The Child at Home

THE Fireside Editor has had many adventures in the wonderland of babyhood and childhood, about which she would like to talk to the mothers who read *Farm and Fireside*. This is the first adventure; many more are to come. When mothers talk together there is generally a host of questions to be asked. Any inquiries addressed to Mrs. Helen Johnson Keyes, *Farm and Fireside*, Springfield, Ohio, will receive interested attention.

PERHAPS it is well that we do not remember our babyhoods, for how could we hope ever to outgrow a sense of self-importance bred in us by the solemn discussion of our accomplishments at that period? Think of watching your mother and her best friend part in anger because one insisted you smiled while the other maintained you had merely suffered a twinge of colic!

Ann had waited a good many years for her first baby, and all the longings of those years rushed into her joy, swelling it, when the son was laid in her arms.

I was one of the first visitors allowed, because I have children and am full of theories about babies.

What was my surprise when, after I had rhapsodized over the adorable bundle in the basket, I saw an agonized expression come over the mother's face.

"Oh," she cried, "it's awful to think how little I know about babies. Why wasn't I educated to be a mother?"

"Fiddlesticks!" I interrupted.

"What!" she gasped. "Don't you believe girls should be trained for it?"

"Yes," I admitted; "they should be, certainly. But are you not trained better than you think? It is true that you do not know yet just how to pick your baby up, or at what age he will perceive color. But, on the other hand, what is there that you do know which has not helped to prepare you to be a good mother. Not one thing. If you are going to learn to run an automobile you must master certain details, and the fact that you can sing, or paint china, won't help you. For it is a small thing to run an automobile, while it is a big thing to be a mother. Every item of knowledge you have, every nugget of experience, will contribute to your success in bringing up a family."

"Through his ears, eyes, touch, smell, and taste the child learns about the world. If a mother can sing she holds the key of a door through which he enters upon one kind of knowledge. If she draws she can make animals and birds, training his eyes to discriminate form and color and avoiding the expense of many a bought toy and printed picture. If she loves literature she can tell him the great legends and stories. There is hardly anything a woman has ever learned which is not drawn upon by the child in his growth. Children have an insatiable hunger for knowledge, just for dry facts: 'Why does it grow dark at night?' 'Why does water freeze?' 'What do measles do to your blood so that you never get them again?' Such questions pour down steadily, and lucky is the child who has an unbewildered mother to answer them."

Ann tossed a bit restlessly in her bed. "All that is far off," she said. "But what am I to do next week when my nurse goes? I'm afraid I'll kill him."

"The first twenty-four hours," I said, "will be agony. At the end of the next twenty-four you will be so cocky and conceited that if the nurse came back you wouldn't trust her to pick him up!"

Ann threw out her arm irritably, and I felt that I must justify my cheerfulness.

"Let us consider," I said, "the daily round of baby's day. Out of the twenty-four hours he will sleep about twenty. Of these four waking hours he will spend one and three-quarters in nursing. I don't know your doctor's schedule, but I am taking for granted feedings at three-hour intervals, from five in the morning to eleven at night, and then an interval to five again in the morning; that makes seven nursings. Be sure that you allow him only fifteen minutes, and that you nurse at one breast only each time, alternating. The glands need six hours to recuperate. There remain two and a quarter hours of wakefulness, which are reduced to one and three quarters by a daily bath. I think your son will decide himself just how to spend that hour and three quarters. He will probably lie in that pretty clothes basket you have

trimmed for him, and watch lights upon the ceiling. The less you handle him the better satisfied he will be. After feeding he should be laid on his right side; when he becomes restless turn him upon his left. In his waking periods he likes to lie upon his back, and it will delight him occasionally to be put upon his stomach across your knees, particularly if there is a little tendency to gas. Now what is there difficult about such a day?"

"Well, the bath; it terrifies me."

"After Miss Gentle goes I will come in every day for a week and show you how to tub and swab and weigh and dress him."

"Oh, will you really?" cried Ann. "You see I haven't a relative here, and Jim being an orphan and an only child—"

"I shall inflict all my theories upon you," I said, "until I see on your face that haughty expression of annoyance which sooner or later comes over the face of every mother listening to advice about her own child."

She smiled, and then began to grow worried again.

"I don't see," she objected, "how any busy person could keep up the regularity you talk about."

"It seems to me," I argued, "the only way a busy person could fulfill all the duties of her day."

"Well, Mrs. Brewster says it's silly, and she's had seven."

"Learn to reason things out for yourself. Can you deny it will be good for you and Jim and James, junior, if your nights are uninterrupted and your days systematic?"

This regularity will enable you to become the best kind of mother without growing into a slipshod housekeeper or an undependable wife. If your neighbors laugh at your ways you can say, 'Why, if they are foolish, does my baby almost never cry?'

"Of course," sneered Ann, "he'll cry a lot, like all babies."

"There's no reason why he should cry or have colic. Babies nursed at regular intervals and allowed to sleep unrocked and unhandled between nursings do not have stomachache."

"Oh, it is such a solemn thing," I pleaded, "this gos-

pel of regularity! Have you ever considered how, when we say a man is leading an irregular life, we mean he is leading an immoral life? Why start him on that course in infancy? There is nothing so moral as regularity. The person who gets up at the same hour every day generally fulfills the duties of the day faithfully, and goes to bed at a wholesome hour with a clean heart. Help your boy now, while your influence over him is strongest. Another point: the person who regards eating primarily as a means of health and strength, and makes his pleasure in it subservient to his need of good tissue, is not likely to become a drunkard or a slave to pleasures of the flesh. Save your child from acquiring in babyhood the idea that in order to be happy he must be sucking food, or his thumb, or a pacifier. Keep his attention off his body, so he will be free to watch light on the ceiling, and to study the texture of the blankets in which he is wrapped. That is the way he grows wise. Moreover, it is easier now than it ever will be again to establish your control over him and to teach him to control himself. Begun later, it must be done by force; begun now, it becomes the very fiber of his character."

"I never thought of it that way," said Ann, big-eyed and solemn herself. "I thought of it just as a fad, like a new kind of wall paper."

Miss Gentle came in just then, and I rose.

"Time to nurse," she said, picking up the Little Novelty.

A great light shone in Ann's face.

"I'll teach him all the things you say," she whispered as her arm slid along the cuddly body laid beside her under the bedclothes and drew him to her breast.

I went out slowly, hating to lose sight of the back of the little downy head.



"I'll teach him all the things you say"

That Careless Postman!

By Hilda Richmond

"GOOD MORNING! Is the postmaster in? I'm Mrs. George William Clinton of three hundred and eleven Locust Street, and I want to see him on very particular business. Oh, he's out of town? When will he be back? Not for a week? Having a vacation? Well, I wish he'd come home sooner. I don't suppose it's a bit of use to tell you about it, but I will. I told the carrier, and he told me to come down here. The idea of leaving a new sewing girl in the house with not enough work cut out for her to do while I'm away, and running clear down here to correct an error made by one of the clerks in this office or someone between here and Dalton! Yes, the parcel was to go to Dalton, and wouldn't you think without one change between here and there it ought to be delivered all right?"

"When did I send it? Let me see? It must have been Friday, for Christmas was Thursday, and I remember that I was thinking of sending a card to Cousin Emily the same day. It takes a card almost a week to go to Arizona, so I wanted to be on time. Yes, I think I'm safe in saying the parcel went last Friday. I remember I brought it down with me the same time I took the baby's shoe to the store to be mended."

"To whom was it addressed? Why, to my sister in Dalton, my youngest sister. That's what makes it look so strange to me. Everybody here in town knows Dorothy, and her parcel ought to go to her without any trouble. If it was a stranger I wouldn't think so much of it."

"Her name? Why, Mrs. Dorothy Hume. I put it on as plain as anything, with street and everything. Mrs. Dorothy Hume, No. 50 Wayne St., Dalton. Now just wait a minute—maybe it was to her husband's address instead. No, I sent it to her. I brought the parcel down here to have it weighed, and then took it home and put it in the package box at the corner of our street. It was that day it rained so hard, and I wouldn't walk down here with it."

"Must I tell what was in it? Did I ever hear of so much red tape? Well, let me see! There was a child's petticoat and a pair of socks for the baby. Dorothy is the dearest girl in the world, but she has no system about her at all. She always strews her things about the house, and when she's gone I have them to pick up and send to her. She ought to have had these things, and that's what makes me so provoked. Her baby has outgrown most of its clothing and she's about to put it into short dresses, so she needs every garment it can possibly wear. I really ought to report this loss to headquarters at Washington, but I'm too easy-going. My husband says I let my sympathies run away with my sense every time. I'm always afraid I'd make somebody with a family to support lose his position, and I'd never be happy afterward."

"Yes, I'm coming back to the parcel. It had in it a child's petticoat, a pair of socks, a rubber doll, a little jacket, a nightgown—No, at the last minute I decided not to send that gown. It was worn and I decided it wasn't worth the postage. I'll keep it till she comes next spring and give it—"

"Dear me! How impatient these people behind me are! I'm doing my best to tell you, but they crowd and make remarks all the time. As I said, there was a petticoat—an—What's that box that girl has in her hands? That's my parcel! What's that? You send such things to the Dead Letter Office? Well, I'd like to know by what authority you send my parcel to Washington? Give it to me this instant! It doesn't make a bit of difference this time whether the clerk at fault has a dozen children, I'm going to report this error. We've had endless difficulties with our mail and never said a word, but this is going a little too far."

"What's that? No address on it? It had an address on it when I dropped it in the package box. Yes, it's my parcel, and I can prove it. Open it and you'll find the things I've been telling you about. There's the petticoat and all! I remember now that I changed the wrapper when I put in the extra things and didn't address this one. Well, it was very stupid of our carrier, that's all I have to say. He saw me carrying that very box home and he might have known it was mine. I've wasted an hour of my time looking after an error he might have corrected in three minutes, for the box is almost in front of our house."



"Yes, madam, I'm going to move out of the way. One would think I was enjoying losing all this time reporting the parcel. I don't believe I'll send it at all but wait till Joe goes to Dalton for his visit. The people in the mail service are so careless that likely enough it would never get there. And the very next time anything happens I will take it up with the authorities at Washington. Don't forget that!"

The Old Man from Nowhere

[CONTINUED FROM PAGE 22]

"Why, the books that I shall study," he answered lamely.

"Oh!" she said.

"I rather think that I like the orchards better than anything else about farming. I shall study about orchards and fruit."

"But you have always worked in the orchards. I am sure you know all there is to know about orchards," she answered with wifely pride.

"I am convinced that I know nothing about orchards," he answered. "I'm going to find out where the sap goes in the winter-time, how the buds are formed, how the blossoms come, and how the fruit is fertilized. I'm going to learn grafting, spraying and—and—"

"And," said she.

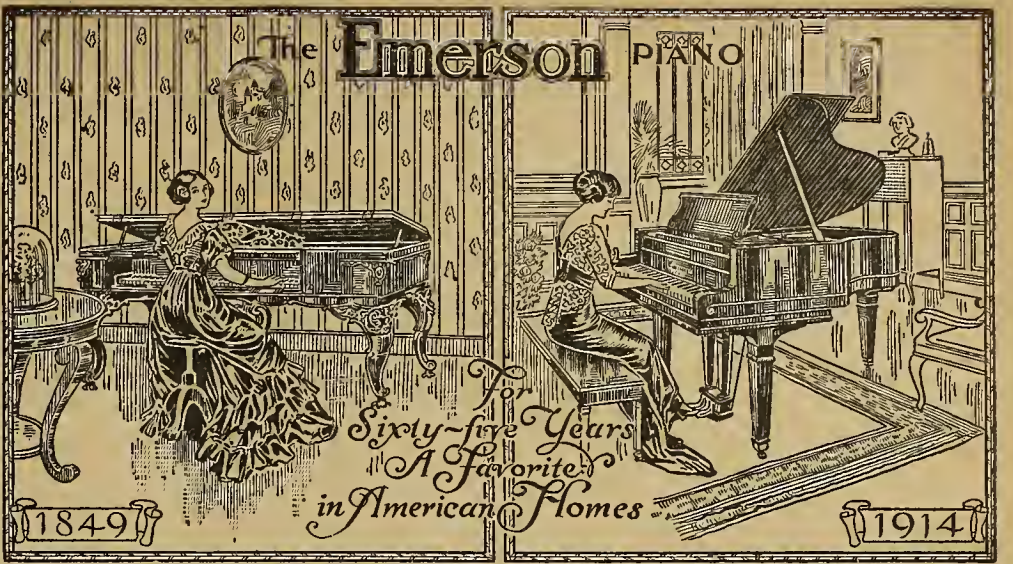
"And everything else that ever was written about fruit-trees."

When the last load of hay was safely mowed away far up in the peak of our great barn I was hastily dispatched to the near-by city, where a public library was maintained, to secure from the withered old book-lover in charge a suitable list of publications on fruit-growing. And my Uncle Truman was mightily astounded when he saw the lengthy list I brought back. He had never dreamed there were so many books and pamphlets pertaining to the culture of fruits indigenous to our soil. I still

remember what great difficulty he had in selecting those volumes he judged elementary enough for a beginner, and from that time on his library grew slowly, year by year, until now it fills long shelves in his "study," and nearly every book is related, in some way, to the growing of apples, plums, peaches and kindred fruits.

On any pleasant day you may see him, grown somewhat gray and gentler with the years, busy with his budding and cross-fertilizing in one of the great orchards on his farm. In those spacious fields where the rye and oats used to mature stretch row upon row of sturdy apple-trees heavy with fruit. Even the hilly pasture-land, where the cows used to graze in those days whereof I have written, has been turned into orchards, until the farm is practically covered with fruit-trees of all sizes and ages.

To-day my Uncle Truman is a specialist of no small fame in the fruit-growing section of our State, and he is mighty proud of the fact. He has learned to apply himself to one thing and to do that well. He knows now that no one man can know all there is to know about any one branch of farming, and that it is always wise to absorb the knowledge and experience of others. He is making money—more money than he ever imagined a farmer could make—and has his own automobiles and every comfort he desires.



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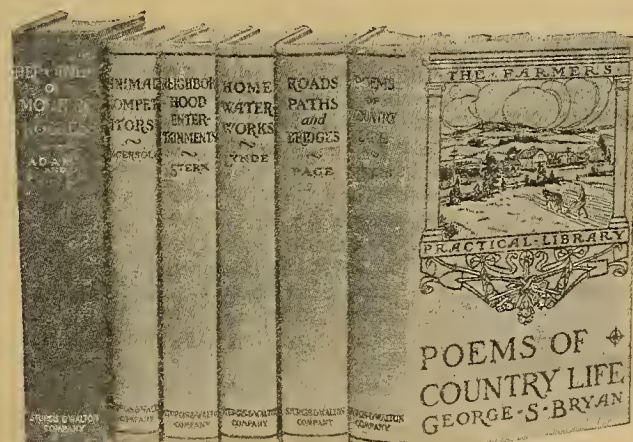
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Thoughts for Sunday



Christ and the Little Ones

By Julia Gill

"THE Master has come over Jordan,"
Said Hannah the mother one day.
"He is healing the people who throng
Him.

With a touch of His finger, they say.
And now I shall carry the children,
Little Rachel and Samuel and John,
I shall carry the baby, Esther,
For the Lord to look upon."

The father looked at her kindly,
But he shook his head and smiled,
"Now who but a doting mother
Would think of a thing so wild.
If the children were tortured with de-
mons
Or dying of fever, 'twere well,
Or had they the taint of the leper,
Like many in Israel."

"Nay, do not hinder me, Nathan,
I feel such a burden of care,
If I carry it to the Master
Perhaps I shall leave it there.
If He lay His hands on the children
My heart will be lighter, I know,
For a blessing forever and ever
Will follow them as they go."

So over the hills of Judah,
Along by the vine-rows green,
With Esther, asleep on her bosom,
And Rachel, her brothers between,
Mid the people who hung on His teaching
Or waited His touch and His word—
Through the row of proud Pharisees
listening,
She pressed to the feet of the Lord.

"Now why should'st thou hinder the
Master."

Said Peter, "With children like these?
Se'st not how from morning to evening
He teacheth and healeth disease?"
Then Christ said, "Forbid not the chil-
dren.

Permit them to come unto me."
And He took in His arms little Esther,
And Rachel He set on His knee.

And the heavy heart of the mother
Was lifted all earth care above
As He laid His hand on the brothers
And blest them with tenderest love,
As He said of the babes in His bosom,
"Of such are the kingdom of heaven."
And strength for all duty and trial
That hour to her spirit was given.

Galilee

Sunday-school lesson for January 4th:
Jesus and the Children. Mark 9, 30-41;
10, 13-16.

Golden Text: Gird yourselves with hu-
mility, to serve one another; for God
resisteth the proud, but giveth grace to
the humble.

THE International lessons for the
coming year are on the closing
months of the life of Christ. The
series opens directly after the Transfigu-
ration upon Mount Hermon, whose snowy
heights look down upon Galilee. The
closing days of His sojourn here had
come. Here in Capernaum He had dwelt.
The sloping hills, the fertile valleys, the
clustering villages, the lovely lake, all
were familiar and beloved. Among this
hardy and open-minded people of the
northern border had been gathered the
followers who were to carry on His
work.

How pleasant to me thy deep blue wave,
O sea of Galilee!
For the Glorious One, who came to save,
Has often stood by thee.

Fair are thy lakes in the land I love,
Where pine and heather grow;
But thou hast a loveliness far above
What nature can bestow.

Graceful around thee the mountains meet,
Thou calm reposing sea;
But, ah, more fair the beautiful feet
Of Jesus walked o'er thee.

A Misunderstanding

It was after the journey from the
vicinity of Mount Hermon to Capernaum,
as they were resting in Peter's home,
that the question of personal ambition
came up. Christ had told His disciples
of His coming death, but their minds
had seized on His resurrection, which
to them meant the setting up of His rule
on earth. For a long period now had
dreams of a new ruler and a new king-
dom been rife among the northern Jews,
and it was most natural that these
twelve men should look forward to a
monarchy with offices enough to go
around. They were planning great af-

fairs. He was trying to teach them
righteousness.

One wonders if it were one of Peter's
little sons, watching these guests from
some corner as children do, whom He
called to Him and lifted to His knee
as He tried to show the dull disciples
how greater than any personal honor
was the life of His kingdom. Hu-
mility is the least popular of the vir-
tues. Even if we do not go as far
as Dickens leads us and confound it
with the hypocrisy of Uriah Heep, we
still have a notion that it is somehow
wanting in self-respect and determina-
tion. But this is a conception curiously
different from the Master's teaching.
Humility, to Him means single-hearted-
ness and enthusiasm; such a devotion to
the task before one, be it great or small,
that its success alone matters, and such
trifles as one's own ease or repute are
forgotten. The mother and father spend-
ing themselves in wise care for their
children; the doctor forgetful of all save
the relief of pain, the saving of life; the
official doing his best for those in his
care, with no eye to his own political

fate; all who love their share in the
world's work better than their personal
gain—these know what the Teacher
meant. And the disciples knew, for
John, recollecting uneasily what at the
time they had thought a fine, brave deed,
tells of the stopping of some stranger,
who, not of their company, yet was fol-
lowing Christ's example and helping the
afflicted of his neighborhood. Truly if
this talk in Peter's house had not been
misinterpreted by later disciples, Chris-
tendom would have been saved bitter
and wasteful dissensions, and the world
be centuries nearer the Golden Age to-
ward which we strive. To have humility
is to have "a heart at leisure from it-
self," that all its strength can be thrown
into whatever "the hand findeth to do."
Napoleon would never have laid down his
power that another better fitted to help
the French people might take his place;
but Washington, if a commander more
able than he had appeared, would have
been glad to withdraw for the sake of the
land and the people dearer to him than
life or fame. This is the true meaning
of the word. This is the glory of service.



Corn Lady Letters—By Jessie Field

DEAR LITTLE SISTER MINE:
Didn't we have a good time at
home Christmas? Homes and peo-
ple never seem half so wonderful any
other time as they do Christmas. Per-
haps that's why New Year's was put just
after—so we can start out right with the
white new year while the impulse of the
Christmas love still lingers in our hearts.
You know I had so much this Christmas
with Mother and Daddy and you and all
the rest that I still have so much left I
scatter it around like sunshine, and the
boys and girls are shining back, too.
Strange how our schools give back to us
what we give to them—isn't it? I wish I
could keep this bubbling-over Christmas
love in my heart all the year. I am
going to try. For after all is said and
done, Sue dear, I suppose the truest
measure of our work as country teachers
is the amount of genuine love we put into
it each day.

I told you while we were at home how
on the evening of our Farm and Home
Program the people passed a motion to
organize a Literary Society and Farm-
ers' Club for the winter. You see there
has been nothing for the young people
to go to but dances—and these were the
worst kind of public dances—and I was
so glad when they just came out them-
selves and decided to have a literary. So
we elected officers and a program and a
social committee. Your big sister is
chairman of the program committee, and
if she doesn't get every single person who
lives around here to take some part on
the programs before the winter is over
it will not be her fault. We are just
getting a good start now, for we were
too busy with the corn-husking and the
Christmas program before.

Our program for Friday night was on
The Farm Home. The secretary of the
club sent to Washington and secured
from the Department of Agriculture a
splendid little paper model of a farm
home. We set this up as the center of
attraction, and each home sent some
utensil or device they had found useful
in lightening work. These were also dis-
played.

We started our program by all singing
"Home, Sweet Home." We are learning
to sing well together, too.

We had an oration and some recita-
tions and extemporaneous talks, with our
newspaper in between for fun, but the
big event of the evening was the debate
on the question:

Resolved: That it is as important for
the farm woman to have modern im-
provements for lightening the labor in
the home as it is for farmers to have
modern machinery for work in the fields.

Three young men spoke on the affirma-
tive and three young women on the nega-
tive. We put it this way just for fun,
and because we thought the young men
needed "educating" along these lines,
and because we wanted the affirmative
to win. Yes, of course, it did win by a
unanimous vote. I hear that Mr. Deer-
ing has started plans for putting water
in his house, and that one gasoline
engine has been ordered for use in
another home since the program. I hope
the influence of it will still keep working.

All the big boys and girls are in school
now, and it makes the work most in-
teresting. We are going to have a spell-
ing school some time soon, and challenge
the McCunn School. I find I have some
good spellers. I wish your school were
near enough so that we could meet for a
spelling match. I expect you'd spell us
down, though.

One thing I want you to be sure to do
these cold, snowy days—wrap up good
and warm and put on your overshoes. It
is fun to walk through the snow and to
have the cold north wind bite your
cheeks until they are rosy, and to learn
to fix your fire so it will keep overnight.
It's fun because it is hard, and because
it takes common sense and good red
blood and leaves you stronger for having
done it. I was happy to see you looking
so well when you were home, and I want
you to keep well. So do not be afraid to
wrap up and dress in keeping with the
season. The other important thing is to
keep the air fresh and pure in your
schoolroom. Open up the windows at
recess and noon, and sometimes between.

Write often, for I am finding much in
your letters of use to me. I see that one
does not need to have taught a long time
in order to have the right spirit and good
working ideas. I'm proud of the way
you are thinking things out, and most of
all I am proud of the earnest unselfish-
ness of the spirit in which you are reach-
ing out to your whole district. And you
are happy and growing stronger each
day. Isn't it fun to be a country school-
teacher? And aren't we just thankful
for the big chance it brings?

All this advice I am sending to the
country teacher I love best, hoping she
may enjoy and use it. HELEN.

The Feast of Bowers

Sunday-school lesson for January 11th:
The Mission of the Seventy. Luke 10, 1-24.

Golden Text: It is not ye that speak,
but the spirit of your Father that speaketh
in you.

IT IS not possible from the different
Gospels to make an absolute order
for the events of these last six months
of Christ's life. But certain points
are clear. Soon after the lovely scene
with the mothers and children, the high-
ways leading from Galilee to Jerusa-
lem were filled with groups of happy
neighbors, journeying through the soft
autumn days to Jerusalem for the Feast
of the Tabernacles, the October Thanks-
giving Day of the Jews. Quietly Jesus
and His group of friends followed the
crowds, and entered late into the vine-
decked and embowered town. The people
were watching eagerly for the coming
of the loved Teacher. The rulers, too,
were watching. It was an adventurous
week. Fearlessly He moved among the
throng, preaching, healing, answering
disputants, ever surrounded by enemies.
But the festival passed without the
threatened tragedy, and He again turned
northward for the few weeks that lay
before the Feast of the Dedication.

Perea

But there were towns He had never
visited, and haste must be made if He
were to finish His work. So the seventy
were sent forth to pass swiftly through
the land on the eastern side of the
Jordan and prepare the people for His
coming, that no time might be wasted.
Many of the talks that make up the main
part of the coming lessons were perhaps
spoken in this rapid journey that filled
November and brought Him again to
Jerusalem for the December feast, and
again face to face with death. We do
not know the paths He took. We do not
know precisely what He said or did, but
if we can think of the scenes simply, as
they appeared to those who knew and
loved Him. He will surely be to our
vision "a figure whose aspect, at once
impressive and sweet, struck with aston-
ishment and awe. His dress was homely
and like that of an artisan, but His ex-
pression was heavenly. His demeanor
modest, and grave without austerity.
There was a simplicity in it that
amounted to grandeur."

On Living Happily

By Ramsey Benson

AMZI is not lacking in respect for
figures, but he believes, too, that
figures can be great liars on occasion.

"Some fellow, I see," says he, "has
the figures to prove that a family of five
can't live happily on less than \$1,200 a
year—\$100 a month—more than \$3 a
day! Now I'd like to bet him a big
red apple that I can find twenty families
of five that actually do live happily on
less than \$1,200 a year, for every family
he can find living happily on more than
\$1,200 a year."

In other words, Amzi wishes to go on
record as denying that poverty in moder-
ate measure makes people unhappy.

"All men are not fools, much less all
women," he insists. "The simple life
is the happy life, and whatever compels
people to live it is a blessing, especially
where so many of us haven't the back-
bone to live it unless we are com-
pelled. Material poverty has done more
to make mankind happy than material
wealth. Put that in your pipe and
smoke it! Poverty of ideals, of course,
is another matter. Poverty of ideals,
when you get right down to bottom
facts, is the source of about all our
woes. It isn't the lack of what they
really need that is making countless
millions mourn, but the lack of what, in
the beggarly poverty of their ideals,
they think they need."

The Little New Year

By Anne Porter Johnson

WHY, here you are, you little tot!
You hove straight in, right on the
dot.

Well, now, I do declare, you are
The brightest Baby Year so far!
And I've seen sixty, all just new,
Start on this trip the same as you.

I've given them welcome, one by one.
And watched them till their work was
done.

They marched along into the past,
Each an improvement o'er the last.
And, judging by your looks, I'll bet
You'll be the very best one yet!

The Housewife's Letter-Box

Do You Need Help?

Have you been looking for a special recipe for years? Do you need any information on household matters? And do you meet with little problems in the home that you wish someone would solve for you—someone who has had a little more experience than you? Then, why not make use of YOUR OWN department and ask the questions which have been troubling you? This department has proved that the spirit of helpfulness is abroad in the land, especially among the women of the farm. That our readers have the mutual desire to help one another is evidenced by the large and prompt response we have had to the questions which are printed here frequently. There is no payment made for contributions to these columns. All answers and inquiries should be addressed to "The Housewife's Letter-Box," care of Farm and Fireside, Springfield, Ohio.

If an immediate answer is desired, it will be sent, provided a two-cent stamp is enclosed.

Questions Asked

How to make linoleum from Brussels carpet? MRS. W. A. L., Connecticut.

How to make a folding quilt-frame that is supported on legs? MRS. E. E., Nebraska.

How to remove mildew from colored wash dresses? MRS. L. T., Ohio.

What causes chrysanthemums to rust? MRS. J. S. W., North Carolina.

How to remove butter-color stains from a gingham dress or apron? MRS. M. K., New York.

How to pickle onions and have them retain their natural color? SUBSCRIBER, Massachusetts.

How to cover a cotton felt mattress? MRS. J. W. L., Nebraska.

Questions Answered

If Mrs. D. C., Kansas, will send her name and address to The Housewife's Letter-Box her questions will be answered.

If A Reader, Indiana, will send name and address to The Housewife's Letter-Box she will receive a reply.

If D. H. L. R., New York, will send name and address to The Housewife's Letter-Box the information requested will be sent by mail.

To Clean a White Beaver Hat, for Mrs. J. O. T., New Jersey—Moisten corn-meal with ammonia, rub well into the hat, let it lie for several hours and brush thoroughly with a soft brush.

How to Make Pickles Green, for Mrs. C. M., Pennsylvania—Put in an iron kettle, cover with cold water and slowly heat to scalding-point. Put in cold water and soak out. Then cover with vinegar, sugar and spices, heat and put into jar, and in a few hours they will be ready for use.

MRS. M. A. F., Indiana.

How to Make Good Vinegar Without Cider, for Mrs. M. D., Pennsylvania—Grind or mash enough apples to half fill a large vessel, fill with water, tie a thin cloth over the top and let stand for several days in the sun, then strain and jug.

M. C., Iowa.

Sweet Pickles, for Mrs. J. V. W., New York—I have never tried using the sour-pickle recipe for making sweet pickles by simply sweetening them. I will give my recipe for making sweet pickles; they never shrivel or become soft. Soak the cucumbers overnight in a brine that will float an egg. Next day take what vinegar is needed, sweeten and spice to taste, and let come to a boil. Have the pickles packed in jars, pour the scalding-hot vinegar over them, and seal.

MRS. J. C. M., Washington.

Quilt-Block Designs, for Mrs. F. F., Ohio, and B. J., Michigan—We expect to publish some quilt-block designs in an early issue, among which will be the "Odd Fellows' Link" and the "Irish Chain."

Lemon Sauce, for Mrs. F. M. R., New Hampshire—Mix one tablespoonful of corn-starch with one-half cupful of sugar, stir into one cupful of boiling water, and cook five minutes. Remove from the fire, stir in a heaping tablespoonful of butter, and stir until it is melted, then add one and one-half tablespoonfuls of lemon juice, or more if liked, and add the gratings of the lemon peel or a little nutmeg to taste. L. H. L., California.

Graham Gems, for Mrs. F. M. R., New Hampshire—Add a cupful of sweet milk to the beaten yolks of two eggs, sift a cupful of Graham flour, a cupful of white flour and four level teaspoonfuls of baking-powder, adding one-fourth cupful of sugar, if liked, and a little salt. Stir this into the milk, add a tablespoonful of melted butter, or more if liked, and the beaten whites of the eggs. Have

gem-pans hot, and bake in a rather warm but not hot oven for twenty minutes. L. H. L., California.

To Clean Chenille Portières, for Mrs. S. P. S., Connecticut—Chenille portières are easily cleaned in gasoline, but if this method is not desired heat corn-meal enough to cover the portières, and put thickly between the folds, placing all in a tub. Leave for a few hours, and then brush out the meal. If further treatment is necessary repeat with fresh hot meal until the result is satisfactory. L. H. L., California.

Apple-Sauce Cake, for Mrs. N. S., Oregon—One cupful of brown sugar, one-half cupful of shortening, one teaspoonful of soda in one cupful of sweetened apple sauce, one teaspoonful of cinnamon, and one-half teaspoonful of cloves, a little salt, a cupful of raisins, and two cupfuls of flour. Bake slowly about one hour.

To Cook Kale and Broccoli, for M. H., Ohio—To cook summer kale or broccoli trim off the stem so it will stand up, soak in cold salted water for an hour if there are insects, drain well, plunge into boiling water, and cook until tender, about fifteen minutes. Drain thoroughly, and serve standing in a dish, with white or any preferred sauce poured over it. L. H. L., California.

Spanish Broccoli, for M. H., Ohio—Melt a tablespoonful of lard or drippings in a saucepan, fry a small minced onion, a clove of garlic and a large minced green pepper. When soft add two raw tomatoes, and when they have begun to cook put in the broccoli, and cover close. Cook until tender—about half an hour. Remove the broccoli from the saucepan, pour the sauce over it after salting, and serve very hot. Water is omitted intentionally.

L. H. L., California.

Marshmallows, for Mrs. E. R., New York—Home-made marshmallows are quite a little cheaper than the best confectioner's goods, and will allow a freer indulgence in marshmallow-roasts, etc., to the lover of sweets.

Dissolve three ounces of clean, white gum arabic in one cupful of hot water, strain, add one cupful of powdered sugar, and let boil for ten minutes, or until the sirup has the consistency of honey, stirring all the time. Add the stiffly beaten white of one egg, removing from the fire, and mixing thoroughly. Add flavoring to taste: either tincture of marshmallow, rose, vanilla, or orange-flower. Pour the paste into a pan dusted with corn-starch; it should be one inch thick, and when cold, cut into one-inch squares, and roll in powdered sugar. Keep in a tin box to prevent drying too much.

Marshmallows with Gelatin—Dissolve two rounded tablespoonfuls of granulated gelatin in eight tablespoonfuls of cold water. To two cupfuls of granulated sugar add eight tablespoonfuls of water, and heat until the sugar is dissolved. Then add the gelatin to the sirup, and let it stand until partially cooled. Add a few grains of salt, and flavor to taste. Beat with an egg-whip until too stiff, then with a large spoon until only soft enough to settle into a sheet. Pour into buttered tins dusted thickly with powdered sugar, and cool until it will not stick to the fingers. Then turn onto a paper dusted with powdered sugar, cut into squares, and roll in sugar.

Cream Puffs, for Mrs. R. T. S., Pennsylvania—Follow directions exactly. Melt one-half cupful of butter in a cupful of hot water, and while boiling beat in one cupful of flour. Take it from the fire, and when cool stir in three eggs, one at a time, without beating them. Drop the mixture on tins in small spoonfuls, and bake in a moderate oven. Custard for filling: One and one-half cupfuls of milk, two eggs, four tablespoonfuls of flour, four tablespoonfuls of sugar, flavor with vanilla. Beat up the eggs, and add to sugar and flour, mixed. Add the milk slowly, then the flavoring. Cook until thick. Cool and fill the puffs by opening them a little. They may be filled with whipped cream instead of the custard.

MRS. O. B. W., New York.

"Look Beyond the End of Your Nose"

grandfather used to say. A big Florida fruit grower remarked that he had to go to California to learn that he had been wrong for twenty years. The potato growers of Maine get hints from Colorado; the apple men learn from the orange growers how to coöperate. Here's where the national-farm-weekly idea comes in. If you want to travel north, east, south, west and get your long-distance lessons in money-making methods without spending carfare, look beyond the end of your nose and get the national-farm-weekly habit. The big National Farm Paper is *The Country Gentleman*.

WE BRING THE BEST FARMS TO YOU. If you had the money and time wouldn't it help your farm if you traveled about the country, looking at the best farms of their kind in the United States? We propose not only to bring the best farms to you, but to bring to you the MEN behind the best farms; let them tell you the secret of their success, which is more worth while than merely looking at the farms. The Best Farms I Know is a series of articles written by men who do know. This one series alone is worth more than the \$1.50 (less than three cents a week) you pay for *The Country Gentleman*.

TEN DOLLARS MINUS ONE DOLLAR FIFTY EQUALS WHAT? Service. One of our editors said the other day, "Here's a check for \$1.50 for a year's subscription accompanied by a technical question that will cost us ten dollars for an expert to answer. Where do we get off?" The answer was easy: We don't get off; *we get on*. And that's why we're getting on. Service. Our three hundred thousand weekly circulation from a little more than nothing two and a half years ago shows that we are getting on. It's service. Nearly three-score experts are at our call to answer any question you may ask us about your business of farming. It's free, in *The Country Gentleman*.

NOTHING SUCCEEDS LIKE FAILURE if you have wit enough to escape the other fellow's pitfalls. We're one of the few farm papers that publish failures—in livestock, poultry, fruits, field crops, farm finance—or lack of finance. We don't publish hard-luck stories; just failures, with reasons why. Failures show you the road to success. They're in *The Country Gentleman*.

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Lot CD-39. Four panel painted door, size 2 ft. 6 in. x 6 ft. 6 in. 500 in stock. A high quality door for the price. This is only one of our many special bargains. Our grand Building Material Catalog and Bargain Sheets will show a full line of inside Mill-work of all kinds.

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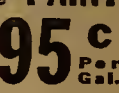
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My Address is.....

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(Signed) LEWIS YOUNG, Pennsylvania.

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I am perfectly satisfied. Don't be backward in referring to me, for you have done more than you agreed to. I saved \$700.00 and also got better material, and a better house.

(Signed) JOHN J. DUNN, Ohio.

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(Signed) HENRY D. CHARTER, Canada.

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Some 10 or 12 years ago, I bought quite a bill of Black Corrugated Roofing from you, and only painted it twice since I laid it, and it is in just as good condition today, as the day it was laid. Please send me your catalog, as I expect to put up a barn next Spring and am looking for something for a roof as good as that bought from you last time.

(Signed) W. W. STODDARD, Ohio.

Will Order More

Am pleased to say the roofing all here and in splendid shape. Allow me to congratulate you on prompt delivery. You will receive more orders from me.

(Signed) D. DUCELLO.

Recommends Our Paint

I have used your Premier Paint in this salt atmosphere for the past four years and find it better for this climate than any paint I can buy, no matter what the price. (Signed) W. A. WEIDE, Florida.

\$13 BUYS COMPLETE BATHTUB

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Hot Water Heating Plants

We are headquarters for steam, hot water and warm air heating plants. They are suitable either for new or old homes. It is easy to install one of these plants in your old building. For this great Fall Sale of ours we are offering a warm air heating plant large enough for the ordinary 5 room house, with all necessary plans and complete instructions for installing, for \$45.00.

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EVERY OTHER WEEK THE NATIONAL FARM PAPER

SATURDAY, JANUARY 17, 1914

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DON'T MISS
THESE GOOD THINGS
SOON TO COME!

An Income Earned at Home

It is hard to see the chances which lie at our right hands. The unknown world out in the Beyond appears to us as full of inexhaustible opportunities; but we cannot always get to it—and then, like To-morrow, it is no longer strange or beyond. When we have reached it we find its people are very like our own people, and its limitations like those which have always encircled us. FARM AND FIRESIDE is interested in casting its searchlight on the near-by opportunities, and on January 31st that light will fall upon— But wait and see!

A Comer and a Hummer!

That's what the soy bean crop is. A comer, for its importance is not yet realized. A hummer, because it pays; pays big for grain or forage. Charles B. Wing, who has raised them for years, will soon tell you how to do it. The best article on soy beans we have ever printed.

In the South

farming methods vary to some extent from those in the North. That has been the opinion for years. But is it true? It is true only as one farm varies from another. The North is learning from the South, and the South is learning from the North, because conditions are so much the same everywhere. N. W. Dunton of Georgia will tell about his hillside ditches,—a strictly Southern theme,—but the Northern man will be surprised to see how much of interest is to be found in this article for him.

Doctoring the Horse

There are many home live-stock remedies to be relied upon. But some of them, if misapplied, do no good, and they may do harm. Doctor Alexander will tell how to give drenches to horses.

The Multiplication Table

is not more exact than the rules for pruning grape vines if they are to do their best. Yet few of us know the rules. We'll give them to you soon.

New Crop for the Dry Farmer

A brand-new way for the man who lives in the dry-farming regions to utilize a neglected weed. Actual market figures. You've all seen the weed, east, west, north, or south.

The Pestiferous Chokey Cherry

Why the nurserymen who are trying to introduce it as an ornamental tree are making a mistake—and why you shouldn't buy it.

Furnace Cooking

Why not make one fire heat your house and cook your meals? With a simple mechanical adjustment and some mental ingenuity it is possible to prepare your dinner on the bed of hot coals which lies neglected in the furnace. FARM AND FIRESIDE will tell you how to do this.

Present Conditions in the Machine Shop

Will the ingenious boy upon the farm, who has a gift for mending harness and repairing engines, do better to apply his ingenuity to farm problems or to train it for the career of a mechanic?

A Socialized County

In order to enjoy fully our friends and neighbors it is necessary to work with them in some interest shared by all. In Litchfield County, Connecticut, music became the great socializing bond between a people of varying ages and conditions. FARM AND FIRESIDE will tell you the story of the great Litchfield Chorus.

In this Issue

Trading and Jollity

How "hoss-tradin'" and other trading, works out in "Trading Mondays" in Texas towns. Good for your community to think of.

Clean Poultry House with Fire!

An Oregon woman sprays the inside of her poultry house with oil, and burns it out. Disinfected? Well, yes! She tells how she built it.

WITH THE EDITOR



The Dual-Purpose Idea

When a man begins to talk the general-purpose cow, he is likely to gain the contempt of a lot of good friends. And I'm not going to talk this cow now. I'm going to let the wolves tear away at Professor McKay and Professor Thomas Shaw for a while, and then I may be able to make up my mind while I am weeping over their remains.

But the other day I saw an advertisement of the Shorthorn breed, as a breed, and I wrote to Mr. Abram Renick, secretary of the Shorthorn Breeders' Association, and asked him a few questions.

For Mr. Renick is advertising the Shorthorn as a dual-purpose cow. I asked him if the best milkers among the Shorthorns are also good beef cattle. I asked him how good as beef the Shorthorn cows are that give around eight thousand pounds of milk a year, and something near three hundred pounds of butterfat. Here is Mr. Renick's answer:

Why Apologize for the Idea?

You ask me a number of questions, and my inference is that you don't think I am following legitimate lines when I state facts concerning milk records made by Shorthorn cows. I think it eminently proper to call the attention of the public to the fact that a Shorthorn cow has made 18,075 pounds of milk in one year. This cow, Rose of Glenside, is not of the beef type, but possesses in a marked degree the Shorthorn type and character. She is recorded in Vol. 57, American Shorthorn Herd Book, page 745, tracing to Imp. Pansey by Blaize (76).

If this cow were dried off and fattened she would unquestionably make a useful carcass of beef. You further inquire if the cows that produce eight thousand pounds of milk are the kind that produce the prime beef. I say, yes, with emphasis; cows of this type can be found in numbers in all the leading herds in this country, and several of this type can be seen at the leading state fairs this season, and from their stalls trophies of both blue and purple are waving signals of recent honors won in the show ring. I will cite you to the grand, matronly, deep-fleshed cow that is being shown by Anoka Farm, and that won first in class and was senior champion at the Kentucky State Fair. This cow carries a splendidly developed udder.

Irene Avalon 46370 is another of the dual-purpose cows that has been a winner at all the leading Western shows the past season. This cow was second at the American Royal, her weight at that show was 2,030 pounds, and from the appearance of udder development is a deep milker. Unfortunately for the owners of these cows and for the breed that an official test has not been made of their milk production. If you will attend the forthcoming International I am sure you will see there on exhibition Shorthorn cows entered in milk contest that will cause you to change your mind, if you are now in doubt, of the existence of a dual-purpose breed of cattle, and that breed is the Shorthorn. I could cite you to a number of breeders that are very successful at the leading shows who have in their herds cows that will make from eight to ten thousand pounds of milk.

It was recently my privilege to pass upon the Shorthorns at the Toronto Show and Exposition, and in the cow class three young cows with their first calves were led into the ring, and it was the general comment of all who inspected them to say they rarely ever saw three such ideal types of dual-purpose cows. All of these cows stood well up in the class when being passed upon for their beef qualities, and it is certainly beyond a reasonable doubt that they would have yielded more than the standard eight thousand pounds which I fixed in the advertisement, and say that cows are numerous that will yield this amount, and which you complain of. The three heifers above referred to were all excellent show animals and possessed in a wonderful degree of perfection the true Shorthorn character with well-developed and perfectly formed udders. I am sure that it would not have required the enthusiasm of a breed partisan to have recognized the superior quality of these cows from either the standpoint of beef or milk, and why apologize when you call them dual purpose?

What is the Cow for Your Farm and Mine?

I assure Mr. Renick that I never meant to infer that his advertisement is not legitimate. Who ever knows of a breed of cows that offer opportunities to farmers of getting a herd which will give him three hundred pounds of butterfat a year apiece, and a calf which will make prime beef, or even good beef, ought to advertise the facts.

I don't believe that this sort of cow will pay the dairyman who is a specialist, as well as the typical dairy cow which will yield five hundred pounds of butterfat a year. But what success will the average man have with cows of that type? How well will the "five hundred pounds of butterfat a year" cow do on the average farm? Will she do well where there are dogs? Will she do well where the small boys "drive home the cows from the pasture up through the long shady lane" the poet tells us about? Won't she die on the ordinary farmer under ordinary conditions?

I wonder after all if the cow that gives about seven thousand to eight thousand pounds of about four-per-cent. milk isn't best adapted to the conditions on my farm and yours, cow-milking reader!

I'd like to have letters from about seventy-five thousand farmers—actual farmers with cows in the barn—on this matter. I had a long talk with one the other day. He milks about twenty-five cows and gets a nice income from them. We figured on his average milk yield, and couldn't discover that he was getting over one hundred and sixty pounds of butterfat a year from his cows. I tried to show him how much better it would be if he had cows which would give him five hundred pounds a year; but I didn't faze him. He said he fed some steers every year and liked cows that gave him good calves.

A Question I'd Like You to Answer

I find that about nine regular farmers out of ten feel the same way. I find that nine economists out of ten think we should raise more beef. For once the economists and the farmers feel alike. As I said before, I'd like to hear from about seventy-five thousand farmers on this question: Which would you rather have on your farm, a herd of cows which would yield according to the best records of the best pure dairy breeds and only furnish the dairy-type quality of beef; a herd which would make the best beef records of the best beef breeds and only give the pure beef breed flow of milk; or a herd which would make medium to good beef, give eight thousand pounds of milk and a corresponding yield of butterfat? Here's a practical question. Let's hear from the fellows who are up against the problem.

Robert L. Smith

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Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per square line for both editions; \$1.25 per square line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 24 inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.



PUBLISHED BY
THE CROWELL PUBLISHING COMPANY
SPRINGFIELD, OHIO
Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago, Illinois
Copyright, 1914, by The Crowell Publishing Company
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter

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Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVII. No. 8

Springfield, Ohio, January 17, 1914

PUBLISHED
BI-WEEKLY

Doubling Efficiency

THE National Soil Fertility League predicts that when its favorite law, the Lever Bill, is passed it will "in due time double the efficiency of the average American farmer." This it will do, according to Mr. Gross, secretary of the League, by the farm demonstrator's or county agent's connecting the farm with the source of scientific knowledge. "The source of scientific knowledge" is the experiment station and the agricultural college. But the Lever Bill is the foe of the Page Bill, which seeks to carry education to the country children through federal aid to rural and other schools in the way of vocational training. Secretary Houston says that our greatest undeveloped resource is our people. Quite true, too; but he ought to consider the fact that the way to develop people is to help the children. We may be poor farmers, and most of us are only halfway farmers, probably, as Mr. Gross implies; but we are rather wedded to our ways. Most of us, however, would like to have the children enjoy better advantages. We generally learn anything that gets into the rural schools, however. What the Lever Bill will do for us old folks through the professors is doubtful, but we all know that if the children were taken now their efficiency might easily be doubled. They aren't too old to learn. And while the county agent is a good thing, a really ruralized system of schools would soon fill our communities with local agents just as able and just as scientific as the county agents. And they would live right in the district, too. If the Lever Bill kills off the movement expressed in the Page Bill it will be the worst bill ever passed through Congress—even though of itself it may be a very good law.

Using the Scientists

WE PAY the scientists and experts, but few of us use them as we might. There is not a worm, a bug, a blight, a fungus, a disease, or a problem of the soil or its cultivation which is not studied by these hired men of ours, and about which they are not anxious to tell us.

A man who studies a single question, like corn-root worm or fruit-tree scale, knows more about it than any man who has other work to do. It would seem the part of wisdom for us who hire them to ask them to help us to understand our troubles.

The state experiment station is always willing to help any farmer, whether it be by examining the water in his well to see if it is fit for drinking, or analyzing his grass seed so that he may know if he is sowing grass or weeds.

At the United States Department of Agriculture in Washington almost any question will be answered by experts free of charge. In such cases not even a stamp is required for reply. They will examine diseased plants and tell what the remedy is, if there is one. Someone has said that the way to tell a toadstool from a mushroom is to eat it—if you die it's a toadstool; but these experts will save you the trouble of dying, and tell you in case of doubt, if you will send them the specimen.

The number of things an observant farmer—especially a young one—wants to know is simply illimitable. And he can be sure that if there is an answer it will be sent him. The country teacher who wants to ruralize her rural school might well ask for these problems to be brought to the school and sent thence to the experts. Such a policy will do much to bring the Government closer to the farms, and to make the pupils feel that it is really their Government. And it will give them glimpses into the wonderful things they have been

overlooking in this country life of ours. FARM AND FIRESIDE's information department will help you or get the service for you. But we cannot anticipate all of your problems. Your questions are needed.

Soil Surveys and Soil Surveys

PROF. MILTON WHITNEY of the Bureau of Soils, in a published interview, states that the Bureau will from now on become very much more active than heretofore in the Northern States. "The demand for soil survey work," he says, "is becoming more urgent." County agent work and farm demonstration activities are being held back, it is stated, because no soil surveys have been made. "We have surveyed about 650,000 square miles," says Mr. Whitney, "and are doing about 30,000 square miles a year. Our men work in pairs, and do about twenty square miles a week. If they do not they have to explain what the conditions were which made them fall below their average." Many soil experts are of the opinion that the Bureau men go over too much ground, and that much of their work is worthless for that reason. In some regions it may be possible for two men to make a



A fine, wholesome scene! The shade, the clean yards, the well-constructed temporary and permanent fences suggest comfortable farming. Of course the stock are contented and happy, and the farmer,—how can he be otherwise? The photographer did not think to have the stock brought into the yards, and we can't forgive him for his oversight. The "summer barn" is a valuable winter asset in the climate of this scene—Missouri. And what Northern farmer would not be proud to possess one like it? And what farm would not better for such yards?

fairly good soil survey at the rate of three square miles and more a day, but in most regions the results of such scanty examination can be of very little use to farm demonstrators, county agents, or anyone else.

Are We Intelligent?

WE ARE apt to brag of our national intelligence, and to think of Americans as the smartest people on earth. But we are all the time showing ourselves to be a very ignorant and backward people. This is true in the world of business especially, in which we are prone to think ourselves pre-eminent. For instance, poultry is very high in the cities, and has been for months, but the shippers for the Thanksgiving trade allowed millions of dollars' worth of it to spoil on account of the mild weather. This was sheer stupidity. The specialists long ago made public plans for shipping and handling poultry, which, if they had been followed, would have saved every pound of this. The U. S. D. A. once sent out a poultry demonstration car showing these methods, and has published a bulletin on the subject. Probably the poultry shippers can read; but do they?

Fertility Impossibilities

A FARM-PAPER correspondent interviewing a truck farmer, on finding that the land had been cropped harder and harder all the time for thirty years, asked how the fertility had been kept up. "And," he adds, "this trucker's reply might well be pasted in many a farmer's hat."

The trucker's reply was to the effect that he was applying manure to the soil at the rate of fifteen or twenty tons to the acre every year. "I am fortunate," said he, "in having several sources of supply, and get it for little more than the cost of hauling."

There are many farmers who might yell cast about for a supply of manure on these terms. Millions of tons of barnyard manure go to waste about towns and cities every year which could be hauled out on their fields with profit by near-by farmers. But men so situated as to take advantage of such supplies of manure are exceptional. It is no trick at all to keep up fertility under such circumstances. Anybody can do it. It requires nothing but industry.

The man who takes hold of a farm and so manages that after thirty years it is as fertile as ever in the absence of such a source of cheap manure is the chap who is a real farmer. The fellow who has no manure save that produced on the farm is the one who has a job worthy of a real man's best efforts. To maintain the humus, to keep up the nitrogen, to detect signs of exhaustion and supply the lack in time by the use of commercial fertilizer—this is real farming. "I may be wrong," this successful trucker is quoted as saying, "but I don't believe you can wear out a soil if you treat it right." Which is just the same thing as saying that you can't empty a cistern as long as you keep it full. But keeping the cistern of fertility full in the soil is a much harder thing when no cheap supply from other land is available, than when manure can be obtained for about the cost of hauling. It may be well for farm-paper writers to paste that in their hats.

Breed for Appetite

AN OLD darkey once said, "Wasn't no need for Adam to name the hawg. Any-one'd 'a' knowed what he wuz by jes' a-lookin' at him eat!" And now the Oregon Station has found out by actual feeding tests that the hog which eats most greedily is the most profitable. Thirty pigs were divided into three lots, the heaviest eaters in one lot, and the others graded according to their capacity for consuming feed.

A hundred hogs like the heaviest eaters, at the rate of gain made and present prices, would make a profit of \$297.65, or almost exactly three dollars a head. A hundred like the poorest feeders would have made a profit of \$115.65, or only a little more than a dollar a head. They were evenly graded as to size and sex. If there is this great difference between the heavy-eating hogs and the light eaters—and most hog-growers will agree with the general proposition—it would seem that breeders might well devote themselves to breeding appetite in hogs, instead of color or fancy points. If the appetite makes the profits, breed appetite.

The Biggest Problem

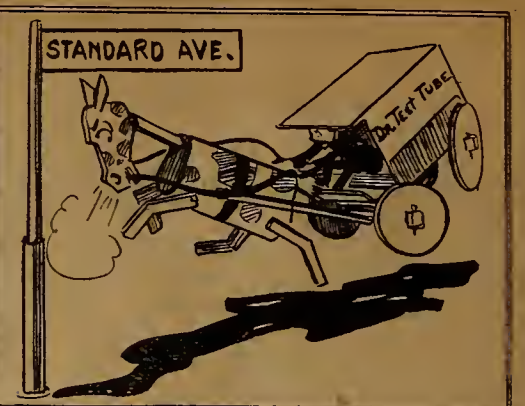
SECRETARY HOUSTON in his report mentions farm tenancy among the reasons for rural inefficiency and bad rural conditions generally. All observers admit the truth of this now. The problem is, of course, getting worse all the time. But nobody seems to put forth a remedy—at least nobody in office. It's a statesman's job. Where's the statesman?



The White Whirlpool

By D. S. Burch, Associate Editor

2. Milk Standards and Pasteurization—Two Hobbies That Have Run Away With the Scientists



The first article of this series, which began with the January 3d issue, compared the dairy business to a business firm called Milk Producer & Co. It is composed of ten partners, each of whom will be required to prove his usefulness. The first member, the educator, has been shown to be inclined toward selfishness rather than looking out for the interests of all. The educator has been retained in the firm with the understanding that he mend his ways.

THE second member of the firm Milk Producer & Co. is the dairy scientist. His business is to know about chemicals and germs, tests and formulas. Babcock of Babcock-test fame, and Pasteur, the discoverer of Pasteurization, are human pinacles of scientific achievement in dairy matters. But the scientist that wants to be our partner is a star of much less magnitude. He is the kind that takes a college course, then a little postgraduate work, and finally accepts a laboratory position for about a hundred dollars a month. He most frequently works in a city health laboratory or a large milk plant. Government and state departments also employ him.

The Public Bears the Burden

The dairy scientist, like all other humans, sees a thing most clearly from his own standpoint or that of his employer, and his observations nearly always are limited to conditions in a single large city. It is hard for a man who works with small samples of a product and delicate apparatus to understand the commercial side of the business, and still harder to admit that any of his work is faulty when he has done it himself according to the methods in which he was trained. His great fault is failure to gather enough data before he draws his conclusions. His deductions are O. K. as far as his data go, but when other scientists announce conflicting results he argues the question instead of working it out by continuing his experiments.

For ten years the public has borne the burden of scientific disagreement on the subject of Pasteurization of milk. Here in Springfield, Ohio, the home of FARM AND FIRESIDE, the largest dairy sells Pasteurized milk, claiming for it the highest purity; and the second largest sells raw milk with equally strong claims as to the quality. The public which pays the scientists to advise which is best, not only has to continue to decide for itself, judging largely from the wording and size of the clever ads of each firm, but continues to pay the scientists for "services rendered." At the present time the weight of the best evidence is strongly in favor of Pasteurized milk as a general commercial product.

Pasteurization means the heating of milk to a temperature sufficient to kill most of the milk-souring bacteria, thus increasing the length of time it may be kept sweet. Many other kinds of bacteria are also killed by Pasteurizing, including the germs of contagious diseases, one of which is tuberculosis. Pasteurization at one time meant many things depending on the temperature used and the method of handling and cooling the milk after Pasteurizing. Of course the results obtained from the different processes did not agree.

Stop Following Leaders Blindly

Some scientists found that it gave the milk a scorched taste, others that it spoiled the cream line. Still others found that the milk would never sour but would finally decay, and a few found that Pasteurization killed all dangerous bacteria and made milk keep well without injuring its quality in the least degree.

But everyone called his own particular method "Pasteurization." At one time two different experts of the Dairy Division of the U. S. D. A. went about the country, one advocating Pasteurization and the other condemning it. A similar campaign existed among leaders in the medical profession to protect the country against the ignorance of "the other fel-

low." Most scientific men would rather take a beating than admit themselves in the wrong after they have once declared an opinion.

Some of the scientists who took part in the Pasteurization squabble had established a wide reputation in other fields but knew very little about milk. Nevertheless each had a flock of admirers who naturally took sides with him, and as a result the public at large still disagrees concerning the value of Pasteurization. We shall always need leaders, but we should not follow them blindly. In matters of public welfare we must do more thinking on our own hook.

Pasteurization as known to-day is the process of quickly heating milk to about 145° F., keeping it there for at least fifteen minutes, and then quickly cooling it. That process destroys all the dangerous disease germs, kills most but not all of the milk-souring bacteria, does not affect the cream line nor the rising of cream, and does not interfere with the digestibility of the milk. It delays the souring of milk by at least twelve hours under normal conditions, and therefore has become an important factor in the milk supplies of large cities to which milk is shipped a long distance.

Pasteurized Milk Good for Babies

Pasteurized milk is found in very few towns of less than five thousand population, because it is not economically necessary for the delivery of sweet milk. Still the same points in favor of its safety apply there as well as in large cities. No scientist of reputation any longer opposes Pasteurization. Doctor Rosenau of Harvard University, and a national expert on disease prevention, fed his young children certified milk Pasteurized, the process of Pasteurization being considered an additional safeguard.

At a milk station in Washington, D. C., where 208 babies were fed on raw milk and 111 on Pasteurized milk, the gain in weight of the latter was, by the nurses' records, nearly a tenth of an ounce more a month than those fed on raw milk. These figures show, as far as they go, that properly Pasteurized milk is slightly superior to raw milk as a food for babies. The most serious objection to Pasteurization is its tendency to create carelessness in producing and handling milk under the false belief that Pasteurization will make bad milk good. It merely makes it safe.

So on this one question the public has been told many different things, one contradicting the other. The standard of the scientific world has been cheapened thereby. And that is just one example. The transmissibility of the tuberculosis germ from the cow to the human is another; the value of bacterial examinations of milk is another; but the king pin of inconsistency in the scientific band wagon is milk standards. Of the forty-eight States in the Union seven have no standards for milk. The

forty-one remaining States have twenty-five different milk standards.

Among dairy products other than milk we find: Four different standards for butter; four for whole milk cheese; seven for skim milk; five for cream, and seven for ice cream. In addition there are scores of city standards, sometimes agreeing with state standards and sometimes not.

See How They Vary

The required amount of butterfat in milk ranges in different States from 2.5 to 3.5 per cent. The standard for sweet cream ranges from 15 to 20 per cent. In seventeen States there is no standard whatever for ice cream. In one State it must have at least 4 per cent. of butterfat; in four States it must have at least 8 per cent.; six States require 12 per cent., and seventeen States 14 per cent. For fruit and nut ice cream the standard ranges from 6 to 12 per cent., but only twelve States have standards for it.

A Herd That Gave Illegal Milk

The three principal standards for milk specify the requirements for butterfat, total solids, and solids not fat. These three standards are useful in basing prosecutions for skimming or watering milk or diluting with skim milk. But sometimes a cow or even a whole herd may be giving unlawful milk in violation of one or even all of the milk standards. A Wisconsin dairyman selling milk in Milwaukee was being watched with suspicion because the test of his milk was less than both the state and city standard, which was 3 per cent. Finally an inspector visited him

and took samples of the evening's milking of every cow in the herd composed of fifteen Holsteins. Following are the inspector's tests showing amount of milk and test of each cow. The results that follow are not creditable to that breed.

Observe that only six cows in this herd gave lawful milk. In States with

a 3.5-per-cent. standard all but one would have failed to come up to requirements:

Quarts Given	Test	Quarts Given	Test
13	2.0	12.5	2.9
13	2.0	8	3.0
7	2.2	9	3.2
13	2.6	4	3.2
13	2.6	7	3.3
2	2.7	8	3.3
12	2.8	6	3.6
13.5	2.9		

Composite tests of the four cans in which the milk was poured showed that three of them were below standard in butterfat and all four were deficient in solids and too high in water. The average percentage of water was over 88.6 per cent. as compared with 87 per cent. for normal milk. This is an exceptional case, but nevertheless exceptional cases mean a lot to the man who happens to own fifteen cows like these. The inspector did not attempt a prosecution but instructed the dairyman to sell the top three fourths of each can after it had stood overnight, and keep the rest at home for stock feed. This dairyman later secured a good bull from a high-testing family and is now breeding for richer milk.

Quite in keeping with human nature, men who have been forced to accept milk standards made by others show their resentment by coming just within the law. In Milwaukee, which has a three-per-cent. butterfat standard, the average test of city milk was 3.86 in 1910; 3.74 in 1911; and 3.71 in 1912, a constant decline in spite of the fact that Wisconsin is a creamery State, and that in other parts of it the tests are rising. In the district supplying Pittsburgh some farmers are deliberately breeding their herds down to as near the three-per-cent. mark as they dare. Such methods will, of course, eventually lead to a lot of undesirable cows and general complaint of the quality of milk.

Use Guernseys for Color

A herd with the mixed milk testing above 3.7, and containing a few Guernseys to give a rich color to all of the milk, represents an ideal condition especially for private trade.

The belief has been advanced, and has gained some credence, that conditions in different States demand different standards. If that were true, then States with similar conditions would be expected to have similar standards, but such is not the case. Take the following six States extending from north to south right through the center of the country. Observe how the standards alternate:

	Butterfat Standard for Milk
North Dakota	3.00
South Dakota	3.25
Nebraska	3.00
Kansas	3.25
Oklahoma	3.00
Texas	3.25

These standards vary, not because of the different conditions in that strip of territory, but because of the different opinions that existed among the scientists in the different States when the laws were passed. The scientists literally make the dairy laws, though the legislators perform the perfunctory task of putting them on the statute books.

We Need More Settled Conditions

The nearest approach to uniform dairy standards in sight at the present time are the resolutions of the Commission on Milk Standards of the New York Milk Committee. This commission, according to the report of the committee, "is composed of seventeen men prominent in scientific and public-health circles."

The International Milk Dealers' Association, representing fifty-five of the largest milk companies of the United States and Canada, recently accepted the standards recommended by the commission "as a general guide," but balked at certain provisions. There will never be an agreement. Aud. [CONTINUED ON PAGE 13]



The service rendered by the scientists is too often like this

In brief, the dairy scientist has been of great help in working out problems relating to the milk business. He is unfortunately subject to prejudices, and is inclined to engage in battle with such of his associates as venture to advance opinions contrary to his own. His place is therefore in the laboratory rather than on the public platform or legislative lobby. He needs more supervision.

A Rockpile Orchard

A Modern Miracle Where Rocky Land is Made to Produce Good Fruit

By Arthur L. Dahl

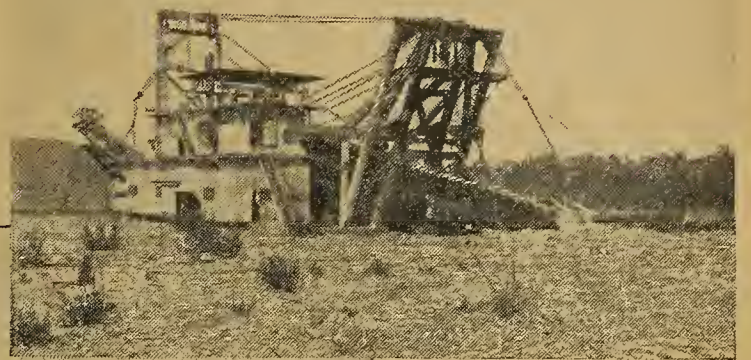


Oranges as they grow on a similarly rocky farm

WHEN Moses smote the rock in the desert many centuries ago, and caused a spring of living water to gush forth, his followers were more delighted than surprised, because those were the days of miracles.

In our present day, however, occasionally a modern miracle is performed that makes this hustling, bustling nation of ours sit up and take notice. Out in northern California the people are now watching with wondering eyes a patch of rocky ground from which was shipped many elegant peaches during this past season. This fruit was raised on what the natives call the "Rockpile Orchard," for the land is thickly strewn with cobbles and boulders left by the gold dredges which deeply plowed it up several years ago in search for gold. When the owner of this particular place, Mr. J. H. Leggitt, started to plant trees and vines on this

land his neighbors laughed at his temerity, for the land was considered absolutely worthless. But that gentleman had his own ideas about it, and his faith is now shown by his works. For the past two years he has been the first to pick and ship peaches and grapes, and all were produced on his rockpile orchard, and not only does



A gold dredge acting as a subsoil plow



This dredged land in California produces grapes early and in abundance

his fruit ripen earlier than that of his neighbors', but it surpasses it in quality and quantity. The early ripening of the peaches is attributed to the fact that

neighbors say, "A miracle has been performed." Mr. Leggitt worked while his neighbors sneered. Not all men who are "different" win, but Mr. Leggitt did.

the rocks retain the heat of the sun long after the ordinary soil has grown cold, thus contributing to the constant growth of the fruit. While soil is scarce, the thorough plowing to which the land was subjected by the dredges enables the roots of the trees and vines to easily penetrate the ground in search for the lower water levels.

Mr. Leggitt's experience is but another illustration of the Biblical saying concerning the stone which was rejected by the builders.

His work and success point very definitely to a reason for failure on the part of many. They have overlooked the possibilities immediately surrounding them. Just so soon as they see and grasp the opportunities near at hand, they say, and their

Fighting Dry Weather in the Garden—By T. Greiner

GARDENING without irrigation is out of date. We have very few seasons without a good long spell of dry weather, and cannot expect to be able to produce the best growth and the best vegetables unless the soil is fairly well provided with moisture. Often our soils, during the hot weather of early summer, and sometimes even in mid-season and fall, become so dry that our crops are cut down to a mere fraction of what we could expect to get in a good season which provides continuous moisture.

All that seems self-evident. But we can see the proof of it by making a few visits to some of the big celery and lettuce patches on the muck lands in various parts of New York State. In every instance I have seen, the man who has the best irrigation system is the one who has the best crops and makes the most money, just as the fruit-grower in this State who is the most thorough in spraying his trees and bushes produces the best fruit and secures the big profits. But if it is true that artificial irrigation is useful and necessary for best success on the muck lands where the soil is supposed to possess the maximum moisture-holding capacity, we must expect that it is far more indispensable on uplands containing a much smaller humus supply.

Of the two types or systems of irrigation, one from overhead and the other from underground, the former

feet, however, inch size must be used, and the size increased to the next larger for every fifty or hundred feet additional. The water distribution is accomplished by means of little nozzles inserted four feet apart in a line the entire length of the pipe in such a manner that in one position of the pipe line all these little streams will throw the water evenly across a strip of land twenty-five to thirty feet wide on one side and, after being turned over by a special turning device, over a strip of the same width to the other side. The water falls over that land just like a moderate rain, and does the same good to the crops.

On the lowlands the water is usually forced into the irrigating pipes by powerful pumps the location of which, of course, is determined by the source of the water supply. In the suburbs of cities and larger villages water under suitable pressure can often be cheaply obtained from the public water plant.

The Problem is Comparatively Simple

For watering the suburban home garden a $\frac{3}{4}$ -inch garden hose connected with the nearest tap is commonly used. But it is nothing more than an imperfect makeshift. When the stream of water is directed over the garden by hand the vegetables are hardly ever watered half enough. People do not usually have the patience to keep at it long at a time, and it takes a lot of water to thoroughly moisten a spot of ground that has once become thoroughly dry. By far the better way is to use a lawn-sprinkling device, even of simplest and cheapest type, turn the water on, and forget about it for a few hours. Then change the location of sprinkler, and again forget for a while, and so forth. By attending faithfully to this job, which may possibly be none too agreeable, good results can be secured.

Some years ago one of my correspondents in the West informed me of his plan of distributing water on the surface, along or between the rows of vegetables, from tanks or other sources of supply located on an elevation. He made two- or three-inch hose from a certain heavy fabric, connected this with the water supply, and placed the long hose between the rows to be watered. The further end of hose was closed, so that the water under some pressure was forced out through the fabric of the hose all along the line. When sufficient water had been distributed and allowed to soak in, the hose line was placed between the next two rows, and so on. It seemed to me to call for a good deal of work and attention. My correspondent reported satisfactory results from it, however.

Mr. M. Garrahan, an expert market gardener in Pennsylvania, some years ago related to me how he distributed water from tanks on higher fields over the surface or between his vegetables by hose made from heavy duck, double thickness, tarred after sewing. This home-made hose answered as a fairly good substitute for the much more costly rubber hose. But that plan has now been abandoned and the Skinner System installed.

Near Batavia, New York, is an interesting example of subirrigation by tile. This is on a tract of muck land which forms a basin, and in winter and early spring is usually covered with two or three feet of water. Several lines of twelve-inch tile laid across the

tract and ending in one common depression on one side provide drainage. The water is then pumped out and lifted over a rise of ground at one side. These tile lines are placed about three feet deep.

Every hundred feet or so is a cement box, a sort of "manhole" with a wooden cover. From a ditch on the upper side of the tract, which is fed by a small stream, a line of four-inch tile about two feet under the surface is laid to each one of these boxes or manholes, and from there to the next box lower in line. By means of a gate inside of the cement box the water in the corresponding line of tile can be held back, and allowed to seep into the soil at both sides. This will seep some distance through the muck. After a while the gate can be opened and the water allowed to run into the next section of that tile line. I could plainly see, however, that the lettuce rows next to the line of tile receive most of the water, while the rows toward the middle between the lines receive very little. So this system is not perfect unless the lines can be placed much nearer together than they were there, and it will involve a good deal of expense to install and maintain the system.

A neighbor on the same tract of land, whose lettuce crops were in danger of succumbing to the heat and drought, was pumping water from a well or depression, using a big gasoline engine. He turned the big stream



Pumping water into open ditches. A temporary outfit for combating drought

is perhaps more generally practiced, and the drift of preference seems to be in the direction of its highest modern form, the so-called Skinner System. This overhead system has been mentioned and illustrated in these columns. It is well adapted to large-scale operations, but conditional upon a full water supply under at least forty pounds' pressure. I found this system installed in the four-acre vegetable garden at the Experiment Farm of the Ontario Agricultural College at Guelph, Ontario, where it gives satisfaction in growing almost all garden vegetables.

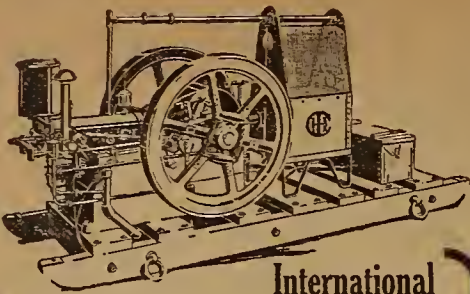
The distributing pipes were placed about three feet above the ground surface. In other places I found them placed six or seven feet above ground. Where the pipe lines are not over one hundred feet long, $\frac{1}{2}$ -inch galvanized pipe is sufficient; for the next fifty



Lettuce under system of irrigation by lines of four-inch tiles. Manhole in lower left-hand corner

of water into a long ditch across the tract, and from there into cross ditches, trying to moisten the soil by seepage. This is an inexpensive system to lay out, but the ditches should not be more than twelve feet apart if favorable results are desired. A neighbor of mine has had excellent success in irrigating by having shallow ditches about ten feet apart between his potatoes, beets, carrots, celery, and lettuce. At least he carried all his crops through the severe drought of last July in good condition.

One thing we must always bear in mind is that mere sprinkling or just wetting the surface is useless. When we use water we must use it freely until the soil is thoroughly moistened down at least four or five inches. After that comes cultivation, as soon as the surface is dry enough. Water again when the soil needs it.



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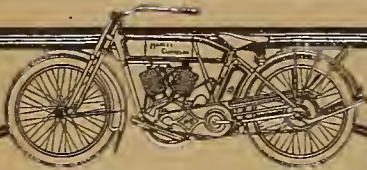
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Sub-Surface Post-Bracing



I HAVE been using the device here illustrated for a number of years for bracing the posts on each side of twelve-foot gateways, and the posts are just as plumb as when first put in. First dig a trench four feet deep and fifteen feet six inches long. In this trench place a log twelve inches in diameter and twelve feet four inches long with a one-inch bolt fourteen inches long through the center, thread end up.

Set gate-posts twelve inches in diameter and twelve feet nine inches long at each end. Four feet from the bottom of each gate-post, bore an inch hole in the direction the fence runs. Take three links of five-eighths-inch iron, slip the center one over bolt in center of log. Now put an inch eye-bolt sixteen inches long through the post. Connect the eyes of the eye-bolts with the chain links by brace-rods with hooks on the end. I use old buggy-axes. Give the brace-rods a coat of thick paint or thin cement to prevent rusting. Fill the trench with earth, and tamp hard. Turn the nuts until the posts are plumb. Take large screw-eyes four or five inches long with eyes large enough to admit a three-quarter-inch pipe. Screw them into the center of each gate-post as illustrated, run pipes through the eyes and attach wire. This prevents the pull of the fence from twisting the post. This gateway is less expensive than you may judge, as most farms have on hand nearly all of the material needed.

B. H. BARNES.

An Emergency Gate



TO MAKE a temporary gate quickly and cheaply use a length of woven-wire fence. Staple one end to one post, wrap the other end around a stick, then fasten the stick to the other post by two wires. To open, simply loosen the top wire, and slip the stick from the lower one. This is a good gate for an emergency when more necessary work than gate-making is pressing.

JOHN UPTON.

Bar-Post Making Simplified

A SATISFACTORY short cut in the laborious work of making holes in posts to receive poles is secured by the following method. Dress at least one side of the post flat, and with a cross-cut saw make cuts



so that the wood between the cuts may be chiseled out to make notches at the desired intervals, as illustrated. Then take a one-and-one-half inch plank, or a one-inch hardwood board will do, and nail securely to the face of the post over the notches.

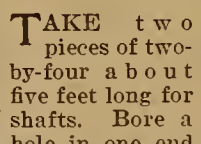
R. W. BROWN.

Gravity Soft-Water Supply



FOR those who wish a cheap and efficient water-supply the arrangement shown in the drawing will work nicely. A fifty-gallon barrel is placed on a strong stand under the eave-spout and connected with the kitchen sink by a small gas-pipe. As many barrels as needed may be used by connecting them with piping. They may also be placed inside of the house on any floor lower than the eaves. Cover the barrels so mosquitos and trash cannot get in. C. F. THOMPSON.

A Wheelbarrow for Twenty-Five Cents



TAKE two pieces of two-by-four about five feet long for shafts. Bore a hole in one end of each shaft. Round and smooth off six inches of the other ends of shafts for handles. The legs are sixteen inches long. Take one-inch boards for bottom, back and sides of bed, which should be twenty-six inches long and twelve inches deep; round off corners of side boards as shown in sketch. The sides are removable and held in place by locks made of a thin steel rod

one inch wide and six inches long, both ends pointed with a file. Bend and drive into shafts, thus making strong staples into which fit cleats permanently fastened to sides.

Put together as follows: Bolt legs to shaft thirty inches from end of handle, put in wheel and axle; axle fits snugly in hole bored through shafts; nail bottom boards to shafts; nail front board to shafts, and support it with two braces running forward. Front board is wide enough to come flush with outside of rails and has upright pieces of one-by-three nailed to edges to firmly hold front ends of barrow sides. Then nail two long braces from legs to shafts, also put a brace between legs. PAUL MATHERS.

Carpenter's Square as a Level



A PIECE of board three feet in length and having one end sharpened is driven into the ground for a rest. A notch is made in the top of the stick large enough to hold the square firmly in position, as shown in the sketch. Make the short arm of the square parallel with a plumb line. Then by sighting over the top of the square you can discover any irregularities in the object to be leveled.

GEORGE E. VAN FLEET.

Odds-and-Ends Cart

ONE of the questions most often asked about our farm is, "Where's the cart?" One of the best features of this style cart is that it may be built in any size from a small hand-cart to a heavy affair suitable for use with a horse. For hand use it is so far ahead of the barrow that there is no comparison. There is no lifting and straining to remove a load, for it is balanced on the wheels. We use it chiefly as a horse cart for hauling milk, bags of feed, vegetables and fruit. The sketch shows how the body of the cart is made and the way the axle is attached. Any man handy with tools can, in building it, vary the dimensions according to the purpose for which it is to be used.

The length of the upright part of the axle will depend on the height of the wheels to be used. Have it so the bottom of the cart when level will be eight or ten inches above the ground.

Fig. A shows the elbow bend of the axle with wheel in position. Cost of hardware:

Bolts and braces	\$0.85
Old axle and wheels .....	.50
Screws .....	.08
Total	\$1.43

The woodwork of the cart may be made of odds and ends about the place. A hinged end may be put on if you wish. The bed will last much longer if built with bolts and screws instead of nails.

MRS. VALENTINE SCHNEIBLE.

Useful Dump-Sled



THIS dump-sled can be made of any strong lumber and any size you wish. It can be drawn by hand or provided with thills or a tongue and drawn by horses. The box for the sled swings on one pivot at each end. The pivot (A) in the upper part of the illustration fits on the runners at the places marked A in the lower part of the sketch. A wooden peg can be inserted at B to keep the box from swinging.

To dump the sled, remove the peg at B and turn the box over.

GILBERT WYNGARDEN.

Light Cart for Quick Work

FOR this light-running cart we used two discarded bicycle wheels, with a steel rod for an axle. The axle is fastened to a piece of two-by-four which serves to fasten the floor of the cart and as a shoulder to keep the wheels in place. The frame is made entirely of strips of flooring.

This cart has been in use eight years and found good for moving anything about the place. It will carry quite a load. A cleat on both ends of the bed keeps articles from sliding off. MRS. WESLEY HOSMER.

Headwork Prize Award

The first-prize contribution on this page is "Useful Dump-Sled" by Gilbert Wyngarden.

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**The Gold
is thin —
but the diamond
still shines
brightly**

This picture illustrates a letter from
one of our friends, which
we quote below:

August 24, 1913.

"Just thirty-one years ago today my wife
now, then my sweetheart, sat under a large
chestnut tree in her parents' front yard, in
the same position as the cover of your
Catalogue No. 82 represents, selecting a
diamond ring from your Catalogue.....
That ring and book told my future life.
Ever since the ring was secured, it has been
worn. It is just as good now as then, only
the band is thinner—but the stone is the
same old diamond— * * * * *

"Since those days times have changed.
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from a small store room to a vast city by it-
self and I have grown from a family of five
sons and a daughter and from a farm hand
to a farmer of over 800 acres of choice land.

"Small profit, honesty and saving are what
make people progress in this country.

"If you look over your filing list, you will
see my name down every month for some-
thing, sometimes every week. And as long
as God spares my wife and I you will find
us on your list—also my son."

Yours respectfully,
(Name on request).

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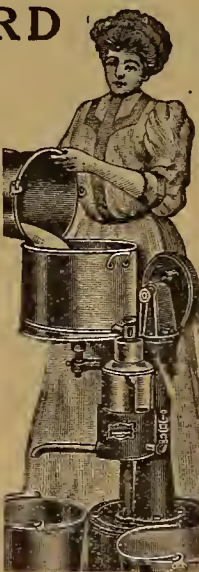
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Live Stock and Dairy

How a Colt Should be Bitted

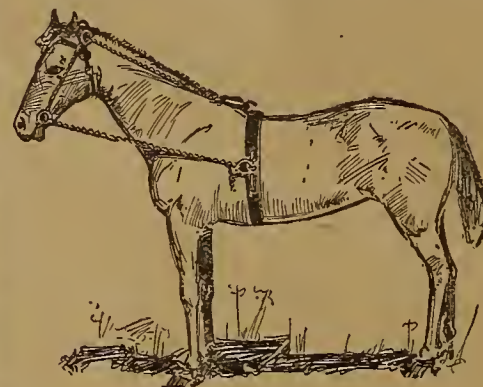
By Edward Vaughn

THERE has been a great deal of argument over the question of bitting colts. Some claim it a benefit, others that it is a waste of time, while still others claim that it is cruel, and in every case each contestant is right. That may seem to be rather a broad statement, but it is true, as I shall attempt to prove.

Why Bitting is a Good Thing

It is a good thing for several reasons. First, because it teaches the colt to carry its head and neck properly. Second, because it teaches the colt to go straight ahead and not weave all over the road. Third, it teaches the colt how to carry the bit in its mouth and not constantly keep chewing at it. Fourth, it will bridlewise the colt to a certain extent.

The colt has learned to carry the bit in its mouth perfectly straight. By your pulling on the rein the colt will respond quickly



A humane biting rig

so as to readjust the bit in its mouth. No matter which way you pull, the colt soon discovers that by turning with the pull the bit readjusts itself.

Now take the colt that has never been bitted. Mark the difference. It fights the bit from the time you put the bridle on until you take it off, and continues to do so sometimes for months before it gets used to it, and we have all seen horses that never have become used to it at all. When guided, they turn their heads and necks but not their bodies. In other words, you have to force them to turn.

Bad Points About the System

Bitting is a bad thing when it is cruel. A biting rig is a man-made affair, and consequently something foreign to the colt and something to get used to, and they will get used to it by degrees, even the old-fashioned kind of rig. But nearly all men who try to use the biting rig do not think of the foregoing facts. They put the rig on, pull it up tight, and then turn the colt loose to fight it out. The colt has never before had a bit in its mouth; has never been obliged to hold its head in any one position for any length of time. Result, it will fight, and fight hard. And who can blame it?—its poor neck twisted into an awkward position, horrible cramps in neck and back, an iron bar in its mouth; in fact, the entire rig, through the ignorance of the man or boy, is converted into an instrument of torture.

The poor colt will break out in a great wash of sweat, fall down, or throw itself and lie for hours, because it cannot move its head, it cannot rise. It must first have its head released, and then, frequently, it must be forced to rise, for it has given up and will try no more. The man who is breaking the colt will say that it is stubborn, when the reverse is the case. It is the man who is stubborn. He is in for a fight, and if the colt is worth the name of horse it will fight back.

So, you see, the old-fashioned kind of biting may be good or bad, or even cruel. I have overcome, nearly if not quite all, the arguments against the use of the biting rig in the following:

The Biting Rig I Use

Take an old back band of a single harness; leave the back strap and crupper on, also the breeching, if you wish to. Then take a bridle, tie two rings, one on each side, just above the brow band. Remove the check. Now take a half-inch cotton rope, fifteen feet in length. Double it, then tie a knot in the double end so as to form a loop which is to act as the loop of the check to fasten or hook on the water or check hook on the back band. Now take one end of the rope, run it through the ring at the brow band, on down the check piece of the bridle through the bit, then back to the lugs on the back band. The same on the other side. Have your helper pull his rope at the same time you do your side.

Get them as near alike as you can; not too severe, yet close enough to hold the head in a straight line. Now, you will

Farm and Fireside, January 17, 1914

observe, the colt can raise and lower its head at will but cannot turn it sidewise. Before turning the colt loose, place the hand under its chin and lift its head up. If it drops it, lift it again. Then pet or caress its head and neck and turn it loose.

With this rig we have eliminated nearly if not quite all bad features. It teaches the colt to hold its head in a straight line, and at the same time it learns to hold the bit, for it soon learns that, no matter whether its head is up or down, the pressure is the same in the mouth. The neck cannot cramp for the reason that the colt can move it. By holding the head rather high, or in a natural position for traveling, the colt soon learns that that eases its mouth.

No rig of any kind can be used on a colt for the first time without there being some punishment attached to it, but with this rig we have the minimum amount. In using this rig or any other, it should not be left on less than a half hour nor more than an hour for the first few times. Gradually increase the length each time up to two or three hours. Let your colt rest each time it is free, from one half to three quarters of an hour. Do not go away and leave it long at a time. By being near it the colt soon learns that you are its friend, and will come to you for protection. After the first day you can begin driving it a little with the same rig on, by attaching another rope or lines to the ends of the rope used in making the biting rig.

All These Rigs are Harsh

Remember to use these reins very carefully, as they are severe. In making this rig always remember to get as easy a bit as you can find. Wash it clean before using it. A straight bit is best. If your colt's mouth should get sore get a little tannic acid. Make a weak wash for it. Take a teaspoonful to a glass of water. This is also good for sore shoulders, saddle gall, scratches, or grease heel.

In handling colts always remember never to get ahead of your colt. That is, do not learn faster than the colt. Because you know a thing, that is no reason why a colt should know it until after he has learned it.

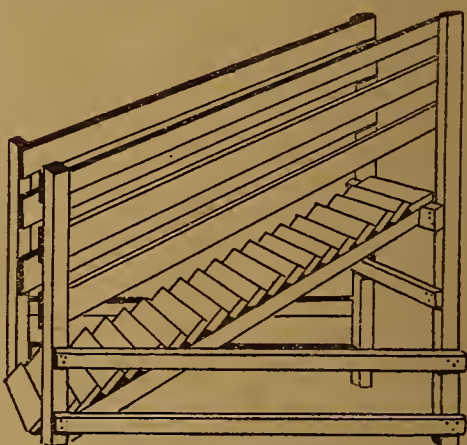
Do NOT let your horse drive himself, but handle the reins gently. Never jerk the reins; to do that is the sure mark of a bad driver.

A Safe Loading Chute

By John Y. Beatty

EVERY live-stock farmer knows the need for a good loading chute, but anyone who has had the misfortune to have an animal slip on a chute realizes the great importance of having the floor so arranged that there is no chance for the animal to slip even when the boards are wet.

Cleats sometimes break off, but the chute shown in the accompanying drawing never causes trouble in this way. Instead of laying the floor in the usual way, the boards are each laid up over the edge of the one just in front. This makes the edge of each board a cleat, and these cleats do not break off. It takes just a little more lumber to



The "never-slip" chute

make such a chute, but the safety of it much more than repays for the extra cost. When you come right down to it, the extra cost amounts to but little anyway.

BLANKET your horse carefully when he stands, especially if he is at all hot. Repeated slight chills stiffen and age a horse before his time.

"First Monday" in Texas

By Z. E. Black

DOWN in Texas the first Monday in each month is "Trades Day," and is the brightest, happiest, busiest day of the month for many a town. As early as eight o'clock every road is crowded with farm wagons, buggies, and automobiles. The entire family comes, including the hired hand and "the little dog under the wagon."

Business and pleasure are combined. The men trade live stock, farm machinery, and land; exchange experiences concerning crops, cultural methods, and animals; and some "swap lies." Men are here from a distance with fine stock for sale. Spirited

auctions are going on all the time. Usually the Commercial Club offers prizes for the best colts, etc.; a premium for the farmer who comes the longest distance, and many other competitions. The merchants all put on special "First Monday" sales, and these are real reductions in prices. For the small-town merchant is now having to compete with the mail-order house in earnest. These trade days keep many a dollar at home.

The "big brass band" plays almost continuously. The ladies of the town serve monstrous "chicken-pie dinners." There are handy rest-rooms for the farmers' wives. Free tickets to matinees at the "movies" are given to every visitor in town by the various merchants. Usually the town boys and the country boys play baseball. There are horse races on at the park. Lectures on various farm subjects, or rather illustrated talks, are rendered by state or government experts.

It is a great occasion. The townspeople and those from the rural districts mingle. Mrs. Jones, from the Happy Hollow community, exchanges recipes with the wife of the leading banker of the town. The women of the farm swap settings of eggs, "gossip," and otherwise enjoy themselves. The children, the hired men, and "the little dog under the wagon" have a good time.

Far more important than financial bene-

legs, and hold it there till he is ready to stand quietly. In this, as in all other treatment for vices, you must be very patient and persevering; but with most horses, for a vice of this kind only a few lessons are necessary.

NO MATTER how gentle the bull is, put a ring in his nose. Arrange a four-foot stick with a snap on one end and a looped strap on the other. Snap this to the ring when taking the animal to and from his stall or lot for water, or in handling him in any way. Play safe!

A Little Deal in Pork

By Charles E. Wallace

MARKET prices for hogs are high now. However, the following statements will show what was done with hogs even when prices were not so favorable to the producer as they are at present.

On October 11, 1911, I purchased four Poland China pigs, just six weeks old, for eight dollars, and at once began to keep an accurate record of all the feed they consumed. I gave them fifteen pounds of skim milk a day, and with this they were fed corn and wheat middlings. The winter of 1911-12 was one of the coldest in history here in Indiana, and I began to fear that my hogs would eat up all the profit. But



The "blue Monday" of some sections has become the "first Monday" of Texas

fits of these "First Mondays" is the fact that they break the monotony of farm life—a necessity for the happiness of men, women, and children living on isolated farms.

How Far is Inbreeding Safe?

By John P. Ross

HOW far in inbreeding is it safe to venture? Where grade ewes compose the flock and you desire to breed up as quickly as possible to the perfect breed type, a certain amount of inbreeding is necessary.

Many experienced shepherds carry inbreeding to an excess, but experience has taught me to fear a loss of stamina and hardiness when carried beyond the second generation. When a desired race type is fairly established in a flock, a change in the family, though never of the breed, of the sire is desirable.

Stubborn Horses and Patience

By David Buffum

"HOW can I get a horse to cross a stream? The horse is afraid to go into water. Also, how should I manage a horse which is worked to a one-horse delivery wagon in town when, after the wagon is backed up to a platform, he will not stop? He steps forward and back again, and keeps on this way until he breaks the wagon or harness." These questions come from a reader in South Dakota.

I should first try to get the horse into the water by backing him in. If this does not work, tie him securely to the tail of a heavy wagon that is hauled by a good strong team, and drive the team back and forth across the ford till he gets accustomed to it and forgets his fear. Repeat this for several days, then try to ride him across with two or three horses in the lead. The chances are that with this companionship he will go all right. Then have one horse in the lead, and finally try him alone. This ought to cure him, though I cannot say how much treatment will be necessary, as different horses differ greatly in the readiness to which they respond to treatment.

The cure for the second trouble is easier. First, have a good strong harness. Attach a strong cord to the near forefoot between the hoof and fetlock; run this line up through the bellyband and back into the wagon. As soon as you get the wagon backed up where you want it, pull this cord till you have your horse standing on three

I closed up all the air holes in their pen and provided dry sleeping quarters for them. I became so interested in them that I weighed one every two weeks to see what gain it was making.

On the 17th of April I sold them at 7 1/4 cents live weight. They averaged a trifle over 153 pounds, bringing me altogether \$44.44. The corn bill amounted to \$11.07, and the wheat middlings to \$2.10. I bought the corn for them every two weeks in advance. The average price was 65 cents a bushel. Figuring the skim milk at 25 cents a hundred, made a total expense of \$28.16, including the purchase price of the pigs. Thus I realized a net gain of \$16.28, which, in my estimation, was a fair profit for my time and investment.

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Garden and Orchard

Two Trees for Dry Regions

By Chas. A. Scott, Kansas State Forester

AS A RESULT of the work of plant introduction, some very valuable trees for planting in various parts of the United States have been brought in from foreign countries. Among these the Chinese arbor vitae and the Russian wild olive deserve special mention because of their qualities that adapt them for planting in dry regions.

The Chinese arbor vitae is an evergreen tree that resembles the American arbor vitae closely in leaf characteristics, but it is altogether unlike it in regard to its soil and climatic requirements.

The Chinese arbor vitae is found growing naturally in the very dry mountainous regions of China. It endures extreme cold in dry locations, but is unable to endure the winters where the humidity is great. It is a tree that has been planted extensively throughout the drier parts of China for ornamental purposes. In the temple courts and burial grounds specimens have been found that exceed one thousand years of age. These trees are of extreme size, attaining a height of fifty or sixty feet and a diameter of from four to twelve feet. It is a tree that readily adapts itself to a very wide range of soil conditions, growing thriftily in sandy soils as well as in hard clay soils, and in many instances is found growing in soils strongly alkaline.

It is less than twenty years ago since this tree was introduced into the United States. It has been planted quite extensively throughout southwestern Kansas and Oklahoma, and wherever found it is making a splendid growth. The trees show no indication of injurious effects from either drought, heat, or cold that has been experienced in this time. It is a tree that should be used extensively for woodlot, windbreak, and ornamental planting throughout the Southwestern States.

A Tree That Grows Quickly

During youth the Chinese arbor vitae grows quite rapidly, the annual average height growth varying from fifteen to thirty inches per year, depending upon the character of the site.

A commendable feature of the Chinese arbor vitae is the ease with which it transplants. Nurserymen who have handled it in large numbers say that there is no more loss in transplanting the Chinese arbor vitae than in transplanting the cottonwood.

There are two distinct forms of the Chinese arbor vitae in respect to habit of growth. One form grows erect, developing a strong central stem. The other form is a low bushy tree composed of several stems of about equal size. The trees of this form seldom exceed sixteen or twenty feet in height, and are prized highly for ornamental planting. For woodlot or windbreak planting the tall form should be selected. The trees should be planted closely so as to shade off the lower limbs and develop a

It is perhaps the most useful tree in Chinese Turkestan. It makes excellent hedges, when properly handled, that are almost impenetrable to man and beast. As a windbreak it is unexcelled. Growing as it does in the driest deserts, it is used extensively to protect the cultivated crops of the oases against the desert winds. It has been noticed that crops growing close up to a row of Russian wild olive trees are not



Thrifty eighteen-year-old Chinese arbor vitae trees. Those of this windbreak average twenty feet in height

impooverished to any extent. For this reason the natives of central Asia prefer this tree to any other sort for windbreak planting. As a sand binder it is of great value in checking the encroaching desert sands. It is also used to a very great extent along the irrigation ditches where there is much trouble experienced in preventing the sandy soils from washing, its great masses of fibrous roots binding the particles of soil



This Kansas specimen of the Russian wild olive tree is twenty-two years old, thirty feet high, and has a spread of limbs of nearly forty feet

straight clean stem that will yield poles and posts. As a post timber it is very durable, comparing favorably with the American arbor vitae (white cedar).

For windbreaks three or more parallel rows should be planted eight feet apart and the trees set six feet apart in the row, the trees in one row alternating with the trees in the adjacent row. In a few years they will form a solid wall of limbs and foliage from the ground up.

For ornamental planting care should be taken to select suitable specimens for this purpose, the most desirable being low, compact trees with dense foliage. The foliage of the Chinese arbor vitae is a deep green through the summer, changing to a dull brown with the approach of winter. The deep green is again resumed during the first few days of warm weather in the spring.

The Russian wild olive, as the name indicates, is a native of Russia found growing under natural conditions in southern Europe and western Asia. It has been planted to a considerable extent in China.

The Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C., describes it as seen in China, as a fair-sized tree in good situations.

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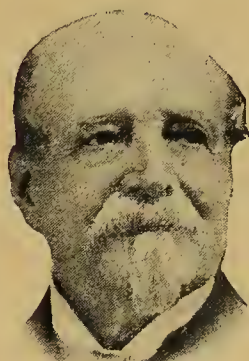


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together. Its wood constitutes the chief supply of fuel in many of the oases. To furnish this wood the trees are pollarded every four or five years. Pollarding is the term applied to the practice of cutting the tops out of live trees at heights varying from six to twelve feet from the ground so that a new top can be developed from the original stem. As the Russian wild olive responds very readily to such treatment, the practice is very general wherever the trees are grown.

The wood, when thoroughly dried, possesses fine heating qualities. A bed of live coals, when covered with ashes, will last throughout the entire night. The fruit of this olive is not edible. However, the dry, cast-off leaves are a favorite food of sheep, goats, cattle, and donkeys. The flowers, though inconspicuous, are very fragrant.

Drought or Cold Has no Effect

In the United States the Russian wild olive has for a number of years been growing very successfully throughout western Minnesota, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and the Panhandle of Texas, withstanding the severest droughts and the most extreme cold that have been experienced in this time.

The Russian wild olive is a medium-sized tree seldom exceeding fifty feet in height under the most favorable conditions. It reaches its best development in heavy rich soil. However, it adapts itself to a wide range of soils and will even endure considerable alkali. On high dry prairie land its rate of growth is much slower than on moist soils. But it is a persistent grower, and if given a chance it will make a satisfactory growth under the most adverse conditions. Its rate of growth under favorable conditions compares favorably with soft maple.

The leaves of the Russian wild olive trees are silvery white, and on this account it makes a pleasing variation when planted in mixture with other trees. It is highly prized for yard and park planting. It reaches sufficient size and is altogether suitable for street planting. It can be used to a good advantage in hedges or for windbreak planting. For hedges the trees should be planted eighteen inches apart in single rows, and should be kept trimmed to a uniform height of three and one-half or four feet. For windbreaks they should be planted from three to six feet apart in rows eight feet apart, and should be permitted to grow without being cut back.

The trees naturally head low and grow rather sprangly. When planted for street or yard trees the lower limbs should be removed early in their development.



"Shoot again, mister, I guess he didn't hear yer."

A Near Kitchen Greenhouse

By W. D. Boynton

A SMALL greenhouse attached to and opening off the cellar and kitchen side of the farm home is a fine thing for the farmer's family and a valuable adjunct to garden and truck patch operations. In it may be started many plants. In it, too, may be grown to maturity many of the little luxuries enjoyed by the city dweller, but too often denied farm families, and that, too, in the dead of winter when such little relishes as lettuce, radishes and early green onions are particularly attractive and wholesome. It is fine to have the chance to carry over a few choice flower plants and to have a few annuals from the seeds blooming in the winter months.

All this may be done in the home greenhouse without at all interfering with the growing of one main crop for the market, such as the cucumber. I find the cucumber is by far the best paying crop that can be grown in the greenhouse outside of the finer productions of the professional florist, to which our little home greenhouse with its varied products cannot well be adapted.

The handling of such a house as I am describing here is a constant source of delight to the youngsters and to the women. To the farmer himself it is an aid to acquiring a liking for horticulture.

Except for a month or two in the extreme heat of midsummer, and when there is a plentiful supply of outdoor-grown stuff, the greenhouse need not be idle. Catch crops of lettuce may be grown in the fall months (ten or twelve weeks maturing a crop for the market), and some lettuce may be grown all through the winter months among the scattered cucumber plants, still small and not occupying much of the space. While the lettuce crop should really have a lower temperature than the cucumber, it does pretty well under the higher temperature, and is quite commonly carried by the cucumber growers as a catch crop.

The product of a small house like this can usually be marketed right in the home neighborhood, and most certainly in the nearest small town. Both of the main products mentioned can be handily shipped to the larger markets if found desirable. Tomato, celery, cabbage and other plants for early spring setting in the garden will be called for by the neighbors when once it is learned that you have them.

A Matter of Convenience

The farmer who has a hot-water heating plant for his home, or who thinks of installing one, can easily and without much additional outlay extend his piping into the greenhouse for economical heating—the same with steam, although not often used on the farm. It is a good plan to have this greenhouse open off the cellar on this account, and for other reasons that will be readily apparent; if possible it should also open off the kitchen, with a little anteroom between, so that when fumigating the greenhouse with tobacco smoke—as will sometimes have to be done—the fumes will not so readily find their way into the living rooms of the dwelling.

In this Washington country of mild climate and plentiful wood supplies a rough furnace large enough to admit cordwood is used for producing the needed heat. Two smoke and heat flues (serving both purposes) lead out from this heater, one under each outer bench, turning at the back end of the house and leading into one common central chimney on the inside of the back wall.

I have a house heated in this manner opening off my cellar and kitchen. The furnace room is on a level with the cellar floor. From a small platform just above this, and on a level with the kitchen floor, a door opens into the kitchen. The size of my house is sixteen by thirty-two feet. If cucumbers are to be grown—and that is my main crop—the width must not be less than sixteen feet. That width admits of three rows of cucumbers, for which my permanent trellises are constructed.

The cost of my glass was \$48; frame stuff, ready plowed and surfaced, about \$16; other lumber, putty, paper, hardware, etc., about \$20; piping, cement and paint, \$12. As I did the work myself, even to the making of the furnace, the above items constitute the cash outlay for my house.

Raising Parsnips

By Mrs. Clara Griffith

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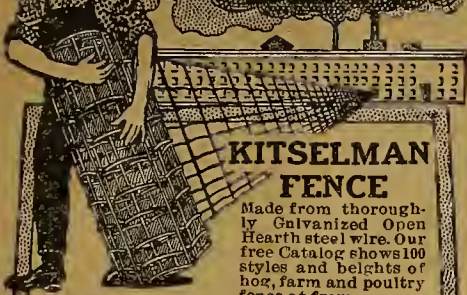
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By Gladys V. Holden

IT IS with a feeling of great pride that I view our little Oregon farm and its buildings. We have tried to make our farm as clean and up-to-date as our slender purse would allow. I have in mind, particularly, as I write, our chicken house.

I always have liked chickens, but have objected to the condition of the average poultry house. I have always declared that if we couldn't have a clean poultry house when we bought our farm, we wouldn't keep chickens. We have, however, solved the problem by erecting a concrete poultry house. It has not one faulty feature. It is absolutely free from drafts. Rats, skunks, and foxes cannot get in; and, there being no cracks or crevices, lice, bedbugs, and other vermin are unknown. When we want to clean it out we spray it with oil and burn it out. In the yard there is a small concrete drinking trough which aids greatly in keeping away cholera and roup.

The dimensions of the house are twelve by twenty feet. It is seven feet in front and five feet in back. It houses fifty fowls. The house has a shed roof. This allows the windows to be placed high up, enabling the sun to radiate in every corner. A shed roof also throws all of the rain to the back. The house has a southern exposure. The windows are on the south side, and the door is at one end of the house. A roof sloping to the north is far cooler in the

or possibly six will be found, and the poor hen is accused of "stealing her nest out somewhere." It takes three days of care to get the egg record back to normal.

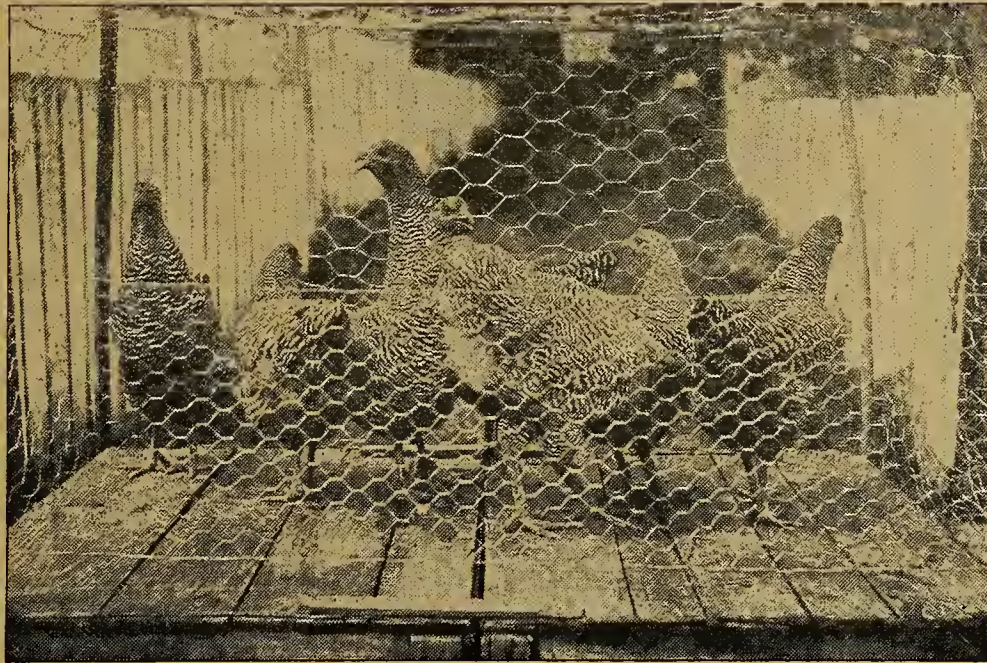
The sudden swoop of a hawk will do the same thing, for a laying hen has her whole nature keyed up to highest nervous tension and demands quiet, easy treatment, free from sudden fright or worry. I have seen farmers who were always yelling at the hens if they dared pick an apple or step in a cornfield, or who let the young dogs chase them unbuked and then swear that the hens didn't pay. How could they under such treatment?

For this reason do not allow visitors to enter the laying house nor their children to prow about the nests. If strange dogs are bent upon investigating the henyard their hide is worth something, but give the hens quiet peace at all costs. Often successive or severe fright will result in dead germs, and then the egg is utterly useless for setting. Have one attendant to care for the hens so that they will not be afraid at any time.

Mating Breeding Birds

By T. Z. Richey

THE mating of males and hens for breeding pens should be done in the late fall or early winter, before the hens have begun to lay. If delayed until February or March the change of location is apt to check egg production at a time when eggs are wanted for incubation. If mating is done early, the breeder will have ample time to correct mistakes and make necessary changes. It frequently happens that a hen showing weakness during the winter months will recover by spring and start to lay. Infertile eggs usually result from



These Barred Rock pullets were hatched February 14, 1913, and began laying the first week in August, when a week less than six months old

summer, as the house is never exposed to the vertical rays of the sun.

We screened our windows instead of putting in glass, it being cheaper and far more satisfactory. There is a burlap curtain at each window that can be let down and securely fastened. We did not use ventilators of any kind, other than the windows. We have been told that they cause drafts and are practically useless.

If the house is correctly built there is no danger of dampness. Contrary to the general belief, a concrete floor is very dry when properly made. The floor will not be chilly or hard on the feet of the fowls if it is kept well covered with litter.

The mixture used consisted of one part Portland cement, two and one-half parts sand, and five parts of stone or gravel.

The cost, as nearly as we can estimate it, was \$42.75. We have used it for over a year with success. It has proved itself invaluable.

IF CANNED while fresh and in a strictly sanitary manner, eggs will keep for years in good condition, if kept frozen. This fact has been established by the Government. A new era in cold-storage eggs may be the result. Cold-storage eggs will be kept in cans instead of their shells, and frozen, instead of almost frozen, as is the present system. It will be a good thing for the poultry business, for it will increase the demand for eggs in the summer, when most of us sell them, and lower the price in winter. And it may make it easier for the big produce companies to corner the market.

Is This Man Right?

By Clifford E. Davis

IT MAY be news to many farmers, or even poultrymen, to know that hens "hold up" their eggs just the same as a Jersey cow will hold up her milk when she gets a bit stubborn or excited; but it is so. Just let a farmer chase the hens from the cornfield or garden, set the dog on them, or throw clods and yell at them, and watch the result. Where the evening gathering showed a dozen or fifteen eggs, not more than seven

such a hen, or, if fertile, the chicks will be weak. The breeder who mates his birds early can be sure that none but hens of great vitality are in his breeding pens.

WHAT'S been done once can be done again—and ought to be done better the second time.

The White Whirlpool

[CONTINUED FROM PAGE 4]

furthermore, little private lobbies of that kind are of small value to the industry except to broaden the viewpoint of the scientists present.

The most feasible way to get uniform national legal standards is through official hearings conducted by the Government and at which all interests are represented. Such form of inquiry provides a means by which the producer can get fair representation, for through the power of his vote he can be represented by government experts in the conference from which his lack of technical knowledge would otherwise bar him.

I am told by Doctor Rawl, chief of the Dairy Division of the U. S. D. A., that there is a strong tendency toward uniformity of standards, though time will be required to work them out. Annual federal hearings to adjust differences of scientific opinions on dairy matters would be of great value in bringing about more settled conditions, and giving the public the best authentic information of how scientific matters stand up to date. The first conference of this kind was held in Washington November 14th and 15th of last year at the invitation of the Secretary of Agriculture. Plans were laid for a clearing house of information on all food and drug matters, also for greater uniformity in standards, legislation, and methods of law enforcement. But as matters stand to-day, our judgment of the scientist is:

His work is valuable and generally correct as far as it goes, but until he has broadened his viewpoint wise dairymen will regard his efforts outside of his particular laboratory duties as potentially dangerous.

[TO BE CONTINUED]

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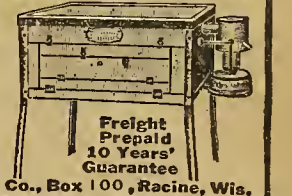
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Cheaper Money—Cheaper Beef is another story you want to read. Interest charges amount to 42 per cent of the total cost of carrying a four-year-old steer to market in the Southwest. If money could be had at 4 per cent the producer would make more profit and meat would cost less to the consumer. One of the biggest beef raisers in the country tells you why.

Chickens?

The Little Farm Hen is the series of articles you must read. No farm is complete without its chickens, but many a farm would be better off without the mongrels that it keeps. Here's a complete course in poultry raising for profit—read it and make the little farm hen fill the family purse.

Orcharding?

Apples Without Plowing, by the sod-mulch system, is a way of growing big apples that you might adopt. You may be too busy to pay much attention to the orchard, but trees on rough land will help to take care of themselves if you follow this method.

Farm Management?

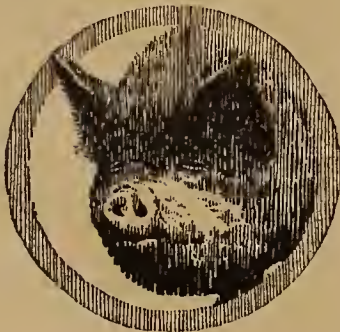
The Best Farm I Know is a series of articles from the West, the Northwest, the South, the Corn Belt, the Fruit Regions, written by experts who point out why certain farms are better than the general run. It will tell you how to manage your own place so it can get into the "best" class.

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The Market Outlook

Don't Get Cold Feet

By W. S. A. Smith

ERRATIC cattle markets with sudden drops of from 25 to 35 cents per hundredweight and equally as sudden advances are not conducive to confidence, and yet there is no reason and no sense in dumping warmed-up cattle on the market, often at a loss.

Such conditions might be expected. Here we have had very high prices for feeding cattle and high-priced corn. Now the highest buyers this year were not the practical feeders. It was the one-load feeder who bought cattle at 7½ cents per pound, and when he had fed up his corn and found money tight he got cold feet and dumped them on the market.

It is foolish for any man to prophesy higher prices for fat cattle. There is without a doubt more unemployed labor this year than last year, and it is the laboring man who eats the beef. Still there are certain conditions which must not be overlooked. Kansas, Oklahoma, southern Nebraska, and Missouri are producing no beef this winter. In fact, they are greedy buyers of corn to carry them through the winter. For every five hundred beef cattle coming to our Western markets there are not two hundred going out to replace them. So that even if we have a smaller demand for beef this winter we have an enormously smaller supply in prospect to meet that demand.

There is every reason to think that by March 1st cattle will be on a basis to pay well for feed consumed. There are numbers of men who have been feeding their cattle since fall eighteen to twenty pounds of corn per day. These cattle will get fat and have to be sold even on a bad market. If the same cattle had been carried along on ten pounds of corn, they would have made profitable gains and would have been carried over the dull holiday months, selling later toward spring probably at a good profit.



Friend—"So you are really running a matrimonial bureau?"
Mrs. Hymen—"Yes—First I married off my five daughters, and with that start the business went right on by itself."

Heavy Runs—Steady Price

By L. K. Brown

THE healthy stride the market took in December has been maintained. The packers realized that the price was as low as they could force it, and so became liberal buyers of all classes, Armour's buyers being the leaders and the ones who thus closed the bear campaign. The period of accumulation of stocks of meat has arrived, so the heavy runs of December were readily absorbed without much influence on the price. The receipts of Chicago for December were the heaviest in five years, being about twenty-five per cent. over the same month last year, but as the average weight was less the actual increase in pounds of pork was not so great.

The large percentage of 140 to 200 pound shots continues to arrive, and is not expected to disappear much before February, when prices should begin to advance. This class of hogs is not what the killer likes at this season. He prefers a heavy hog, so that there will be a good percentage of lard and a small shrinkage in the curing process of the meat that goes into the cellars for next summer's consumption. The light-weight is an excellent hog to supply the fresh meat demand, but it shrinks badly in curing. The price of provisions has been well up in comparison to the live-hog market, and since the market has taken its winter stride pit actions have had a healthier tone. Lard has been out of line with other hog products. Because of its low price, buyers are beginning to stock up; and as there is but little in store, prices are apt to take advances.

Each Market Tells a Story

The average weight of hogs received at different markets is the reflection of the territory tributary. For example, Kansas City and St. Joe have been receiving many light shots. This is because of lack of feed caused by last summer's drought. Sioux City has also been in the same class, and this is due to the heavy ravages of cholera in its territory, while Chicago and Omaha have a fair corn crop and no great amount of cholera, so have but a small decrease in average weight.

The open winter and slump in corn prices is apt to cause some growers to put

Farm and Fireside, January 17, 1914

part of their corn into their hogs and thus improve the average weight and quality of the receipts and also the prices. A new element is coming into the market which will tend to raise the prices some. Many of the stock yards are getting considerable demand for stocker hogs to go back into the cholera-swept districts or into the newer Western territories. Thrifty shots are vaccinated, and quarantined at the yards for three weeks thereafter, and then shipped to the country. So far the experiment has been very successful. It may be that in a few years this stocker trade will be an influential fact in the market.

IN SELECTING a breed of hogs the one that will produce the most pork with the least amount of feed is the one to choose. If a scrub boar is used each succeeding litter will run to snout and bristles more and more.

Sheep are Steady

By J. P. Ross

AT THE opening of the new year it is pleasant to be able to record that, as far as prices are concerned, there is no cloud visible on the shepherd's horizon. The following table from the "Farmers and Drovers Journal" serves to show how steadily remunerative they have remained—and have even improved for some years.

	Top	Sheep Bulk	Top	Lambs Bulk
Last week, 1913	\$6.00	\$4.50—\$5.50	\$9.35	\$7.40—\$8.10
Four weeks ago	5.10	4.25—4.80	7.80	7.15—7.60
1912	5.40	4.40—5.00	8.65	7.65—8.25
Two years ago	4.25	3.50—4.00	6.35	5.75—6.15
Three years ago	4.25	3.50—4.00	6.00	5.85—6.35
Four years ago	5.85	4.50—5.50	8.40	7.35—8.25
Five years ago	5.25	4.10—4.75	7.85	6.75—7.60

Save in the exceptionally trying year 1910-11 this uniform steadiness has been remarkable. The taste for mutton and lamb is growing; wool is being used in a far greater variety of garments, and more generally by the bulk of the people than ever before. In all civilized countries population is increasing, while in those where wool is a staple product flocks have been decreasing in number.

Where the Sheep are to Come From

Over six million sheep were received in Chicago alone last year, and as packers and butchers make no distinction of sex in slaughtering the destruction of ewe lambs and yearlings has been nothing short of disastrous. The ranges can no longer be depended on for breeders and feeders, and it is up to the Corn Belt, the Northern and the Eastern States, to supply the deficiency. This they can only do by saving the best of their ewe lambs and yearlings to breed from, and by making sheep culture a leading feature in the farming business. Nothing will pay them better.

From present indications it looks as though the man who next spring and early summer—the earlier the better—has a nicely finished lot of lambs to offer may look for highly satisfactory returns. Quality will be looked for because feeders have lately been forced to be contented with some pretty rough stuff, much of which will be on hand early in the spring; and ripe spring lambs will be much sought for.

Wool is Short Everywhere

The quite satisfactory prices now obtaining for mature mutton as well as for lamb, together with the fear that the recent tariff changes will materially affect those of wool, will no doubt in many cases lead to an undue loss of interest in the cultivation of the latter item of ovine product. In this regard it should be remembered that the wool crop is short all over the world; that the demand is pretty evenly divided between the finer and the coarser grades; and that by the judicious selection of pure-bred rams, for the one grade of the Oxford, Dorset, or Cotswold, and for the other of the Shropshire, Hampshire, or Southdown breeds, even fairly good grade ewes may be depended on to produce lambs carrying fleeces of either of the classes aimed at.

The fact that the male exercises the greater influence in determining the grade, quality, and weight of the fleece seems to be fully established, and for this reason, in selecting the ram to be the sire of combined mutton and wool lambs, special attention should be paid to the quality of his fleece. Varying, of course, with his breed, the fleece should combine weight, length of staple, fineness, sufficiency of oil, and evenness of quality and of distribution. Of the mutton qualities, vigor of constitution, structural formation, and adherence to race type must be judged by sight; quality of flesh—mellowness and elasticity—by touch. It is the possession of these various qualities in as near perfection as possible that makes the ideal sire for a combination mutton and wool flock. The wool is the hardest to get just right.

I have just been reading a letter from England. The writer, a well-known sheepman, is a tenant farmer, paying a yearly rent of ten dollars per acre. He says that at present prices his wool pays his rent and expenses, and he has his lambs for clear profit. He attributes his success largely to the care with which he selects his rams, always with an eye to their possession of the dual mutton and wool qualities.

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per acre. As high as
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related of the homesteaders in Manitoba,
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THERE is a good deal of difference of
opinion as to which is best to use on
reinforcing stable manure—raw rock
phosphate or acid phosphate. Some claim
that a part of the acid phosphate becomes
unavailable when mixed with the fermenting
maure, but the best opinion is that it stays
in the soil and is eventually used by the
crops. It pays to use either, rather than
the natural manure alone.

A thirty-acre wheat field at Great Bend,
Kansas, was overflowed by a small freshet,
and because of this irrigation made a splen-
did crop. Taking this hint from nature the
neighboring farmers are building a co-opera-
tive dam to set back the water and have a
freshet whenever they desire. In other
words, they will irrigate. The Kansas Agri-
cultural College is very active in furnishing
plans and advice to farmers who are putting
in their own irrigation plants, either gravity
or pumping. It seems to pay in many
cases—very far east of Kansas.

The Ohio State Farm has found after
fifteen years of trial that if forty pounds of
acid phosphate are added to the barnyard
manure to the ton, as it accumulates in
the winter, and spread with the manure
in the spring, the benefit to the crops grown
in the three succeeding seasons is from fifty
to one hundred per cent. more than if the
untreated manure is used. This would
seem to be the way to get the most out
of phosphates.

A North Dakota student named Mani-
kowske has devised another machine for
generating electricity for farm lighting and
power by a windmill. The Wisconsin device
has already been described in FARM AND
FIRESIDE. If some concern with adequate
capital and good engineering ability would
take up the development of this system of
lighting, it seems to promise great useful-
ness for the Prairie States.

Canada thistles! A farmer working un-
der the direction of an expert plowed them
up two years ago in June; then disked often
enough to keep them from getting a start—
twice a week at first, and after that often
enough to keep the thistles out of sight and
discouraged. After a while they would stay
"killed" for two weeks at a time. The
land was badly infested, but the next year
there wasn't a thistle. Lots of work, but
it did the business. Have any of our
readers any objection to this system, or
anything better to suggest?

An Illinois horseman gives as his opinion,
based on experience, that bran is a good
thing to feed to horses regularly. He re-
commends that a fifth by weight of the grain
ration be given if fed with oats, and says
that it may be fed dry with grain to the
amount of two to four pounds daily. It
has a beneficial laxative effect, and when a
horse is off his feed it acts as an appetizer.
Its feeding value is well known.

Some people fill chickens with poison so
that the predatory hawk will be poisoned in
his moment of victory. They boil nux
vomica buttons in water and use it in mak-
ing a mash for the chickens. The chickens
can stand the nux vomica, but when the
hawk eats the saturated chicken it is non

est hawk very soon. Same with rats. How
about people who eat the nux-vomica-ized
chick? Echo answers, "How?" But a New
York woman has a safer scheme. She puts
a drop of honey on the back of the neck of
the day-old chick and puts a little strych-
nine in the honey. The bird or animal that
eats the chick will get the strychnine and
pass away. The little button of dried honey
is clipped off after two or three weeks and
carefully burned. One chick with a honey
drop may be left exposed as a bait. Have
any of our readers any thoughts on this
topic?

Aside from butchering, what will cure
a hog of the vice of eating chickens? One
man thinks he did it by feeding soaked
oats, new corn, and a slop of water and
shorts. Another thinks that they get the
depraved taste because of a lack of protein
in their feed, and advises a diet in which
tankage has a part. One powders the car-
casses of chickens with cayenne pepper and
allows the hog access to the peppered
chicken with no other food or water. An-
other bothers the hog with a chain on his
front leg, and still another helps the chicken
to get away by a leather blinker across the
hog's eyes, fastened to rings in the ears.

A Kansas man has a silo which holds
half a million tons of silage. Anyhow, the
daily papers printed a story to that effect.
"Wallace's Farmer" says that a silo of
that size would have to be about ten miles
high, if it were twenty-two feet across. It
is mean of Uncle Henry to shake the con-
fidence of the readers of daily papers in the
agricultural matter in their columns. By
making that silo half a mile across it would
be perfectly easy to build it low enough so
that it could be unloaded by aviators and
still hold the half a million tons of silage.

Twenty farmers in central Illinois report
that their alfalfa averaged four tons to
the acre in the dry summer of 1913. This
was from three cuttings. Most of them
pastured hogs on their alfalfa after the
third crop of hay was taken off. Every
man of these farmers now believes in al-
falfa, though several of them have grown it
this year for the first time. One says,
"Alfalfa is the best paying crop I ever
raised." Another says, "Alfalfa is the most
wonderful hog pasture there is." These are
the verdicts of actual farmers after actual
trial.

The cabbage-plaut louse is about the
hardest of all cabbage pests to control.
There are many remedies, most of them
more or less well known. Tobacco smoke is
said to be very effective when properly
used. Have any of our readers used it,
and, if so, how? In the orange and lemon
groves, cyanogen gas is used to kill pests
by throwing a tent over the tree and filling
it with the poisonous gas. Why could not
a basket be inverted over the cabbage plant
and a wad of burning tobacco laid under it
beside the plant? Would it not confine the
smoke and thus kill the lice? Would it
pay?

The drought-resisting sorghum crops have
not been grown much north of Nebraska,
but the South Dakota Station experts be-
lieve that kowliang will do for South Dakota
what Kafir corn and milo maize have done
for western Kansas. As long as the supply
lasts, a few seeds will be sent out for trial
in South Dakota free on application to
Professor Manley Champlin, Brookings.
The sorghums are worth studying where the
rainfall is scanty.

AFTERTHOUGHTS
by Ramsey Benson

Language is the vehicle of thought, and no vehicle
travels so often empty.

Comfort travels second class, and so there has to
be a first class for Fashion.

The history of revolutions shows that it is a wise
worm which can turn without skidding.

Sham, since it is hollow yet desirous of seeming
sound, has especially little use for the knocker.

The wise man and the fool differ little, perhaps,
in respect of what they know, but very greatly in
respect of what they think they know.

There is a kind of reform which proposes to get
rid of red tape by making it blue and which is satis-
fied at length to make it pink, on the theory that
half a loaf is better than none.

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FRIENDLY TIP

Restored Hope and Confidence.

After several years of indigestion and its attendant evil influence on the mind, it is not very surprising that one finally loses faith in things generally.

A N. Y. woman writes an interesting letter. She says:

"Three years ago I suffered from an attack of peritonitis which left me in a most miserable condition. For over two years I suffered from nervousness, weak heart, shortness of breath, could not sleep, etc.

"My appetite was ravenous but I felt starved all the time. I had plenty of food but it did not nourish me because of intestinal indigestion. Medical treatment did not seem to help. I got discouraged, stopped medicine and did not care much whether I lived or died.

"One day a friend asked me why I didn't try Grape-Nuts food, stop drinking coffee and use Postum. I had lost faith in everything, but to please my friend I began to use both and soon became very fond of them.

"It wasn't long before I got some strength, felt a decided change in my system, hope sprang up in my heart and slowly but surely I got better. I could sleep very well, the constant craving for food ceased and I have better health now than before the attack of peritonitis.

"My husband and I are still using Grape-Nuts and Postum."

Name given by Postum Co., Battle Creek, Mich. Read, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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FARM AND FIRESIDE
Springfield, Ohio

Poultry-Raising

Automatic Sack Hopper

By A. E. Vandervort

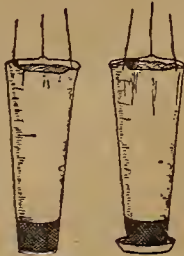


Fig. 1

Fig. 2

ON A VISIT to an extensive poultry plant I saw the type of automatic food hopper and exerciser shown in Fig. 1 in the sketch. I constructed two for my own use and have found them satisfactory.

Take a wheat sack and fasten three strong wires to the top with which to hang it up from a rafter or hook in the ceiling of the pen. Cut off the bottom of the sack. Take a strip of wire cloth having a mesh about as large as a kernel of corn and fasten it inside the sack at the bottom so that it will hold the sack wide open.

Next saw out or obtain a round piece of board an inch thick that will just fit inside the wire cloth. This round piece of board furnishes the bottom for the feeder. Fasten the board in place with double-pointed tacks.

You now have completed a hopper that is very easily and cheaply constructed, and one that will hold two bushels of grain. Different kinds of grain, such as wheat, oats, and cracked corn, may be mixed as desired. It will not run out of the wire mesh, except for a few handfuls at the first filling. Have the hopper hang within twelve or fifteen inches of the floor of the pen so that the hens will have to reach and pick at the grain through the wire mesh and cause an additional supply to fall upon the litter. They will pick some grain out of the mesh, but most of it will fall into the litter and there be scratched for by the fowls.

When Used for Dry Mash

This exerciser has given me very satisfactory results. It saves a lot of labor feeding the fowls and they appear to be always busy.

For a dry-feed hopper, in which to feed dry ground grain, the same thing may be used with a few slight changes. The same sack and strip of wire mesh was used, but instead of the wooden bottom there is an ordinary galvanized iron pan about two and one-half inches deep and about four inches wider in diameter than the width of the circle made by the strip of wire mesh. This pan is fitted up against the bottom edge of the wire mesh and held in position by wires attached to the mesh.

There is a distance of about two and one-half inches at all points between the outer edge of the pan and the strip of wire mesh. I fill this hopper with dry mash and meat scrap and the fowls pick through the wire mesh, causing the ground grain to fall into the pan. They get most of it by the picking process, pulling the food through the wire mesh. There seems to be practically no waste, and the device is automatic.

Poultry Hospital or Pesthouse

By John L. Woodbury

I PREFER the former name for what has proved one of the most valued adjuncts of my plant. It suggests light, sunshine, cleanliness, and good ventilation, all of which at least should be properly embodied in quarters for ailing fowls.

The moment a bird is found to be sick it should be separated from the rest of the flock. This lessens the chance of spread in case of contagious diseases, and in any event saves the sufferer a lot of pestering from the other fowls.

Being frequently confronted by the problem of where to put affected birds, it at length occurred to me to build a place expressly for them. It certainly has paid a good profit on the small investment.

I did not hastily construct my little building, nor put it in a place not suitable for anything else. On the contrary, I selected one of the best possible sites, and gave as much care to plans and construction as though the health of persons instead of mere fowls was under consideration.

Provision was particularly made for plenty of air in summer and warmth and sunshine in the colder months, for I have found that there is nothing worse for sick fowls in hot weather than stived-up air.



This hospital takes care of the sickness in a flock of one hundred adult birds. Size 12x6 feet; 5 feet in front; 4 feet in rear. Door at each end opening outward; screen doors open inward. Divided into two pens, 6 feet square, by wire netting. Roosting closet for cold weather; low roosts outside closet for warm weather. Building shingled over tarred paper. Ventilator openings at each end at top.

nor better for them in cold than the direct rays of the sun. Divisions were made, for of course different cases may require widely different treatment; as for instance, some bird in a run-down state needs to be tempted with delicacies, while some other, whose ailment is largely due to overeating, should be made to exercise freely and curtailed as to ration. Convenience in watering, feeding, and cleaning (take particular notice of this word) were given due consideration, and a little cupboard to hold the more common home remedies was installed. Completed, my modest infirmary gave me no little satisfaction, and I have been growing prouder and more appreciative of it ever since.

The Sick Bird is Taken Care Of

Since the installation of this building, indeed, the appearance of sickness among my fowls has lost most of the terrors with which I formerly regarded it. Immediately a bird is found to be the least bit "under the weather," instead of being forced to deliberate as to what to do with it, I promptly hie it into quarantine and make it as comfortable as possible. In a few days it can usually be told whether or not the case is one it will pay to fuss with. If plainly incurable, the patient is at once disposed of and the place thoroughly cleaned and disinfected to make ready for the next comer.

If the cleaning and disinfecting is properly attended to, the place can be utilized for other than strictly sick fowls. A bird with an injured eye or comb may often be saved from being ruined by the mischievous picking of its mates by removing to separate quarters, or the habit of feather-picking may in many cases be stopped in a pen by withdrawing, until after the feathers have grown again, the victims of the plucking. And females with egg trouble will occasionally pull through if they can be relieved of the too persistent attention of the males. The hospital building, if unoccupied by infectious cases, offers a ready solution of "where to put such birds."

I do not wish to be classed with the crank who is forever dosing his fowls. But, on the other hand, I cannot fully agree with the man whose only prescription is "the hatchet." Whenever I see a bird ailing I consider the chances are three to one against its getting well. Yet I have saved many valuable birds by doctoring.

I once bought five blooded cockerels, farm range, healthy and vigorous. One night I threw a few baskets of slightly damp leaves under the roost. The next morning three of them showed up with the roup. That was before I built my sanitarium. I put the three birds in separate cages in a warm room (it was in winter) and carefully treated them daily—washed out the swollen eyes with warm water tintured with kerosene, and by means of an oil can squirted some into the mouth and nostrils. Two of them had an eye so badly swollen that not

a bit of the ball could be seen, the third had both eyes completely closed. For three days I had to guide the bill of the blinded bird to the mash, wet with milk, which I made for all. In this way I induced him to eat enough to keep him alive. They all came out of it without the loss of an eye or even a blemish, and so far as I could see were just as sound and vigorous as they were before the attack.

Some breeders declare they would never breed from a male that had ever had roup. I never make a practice of it. But on this point let me give you a story:

A brother breeder of mine had a first-prize cockerel at a big show taken with the roup. He put him in a cage in a back corner of his kitchen, and for two weeks I never saw a sicker bird. Twice a day the breeder washed out the affected eye, the matter often running from it in a stream. He was taken the last of December. His eye was still running slightly when he was put at the head of a breeding pen in April. The eggs after him hatched well, and apparently no disease or weakness ever developed in the breeder's flock as a result of breeding from this bird.

Some persons come out of a severe illness permanently enfeebled, but many others regain their normal strength. So with fowls. Some sick birds are worth saving, and I believe it will pay every breeder to have a building, of a size proportioned to his flock, to serve exclusively as a "hospital."

Testing for Incubator Moisture

By John Y. Beaty

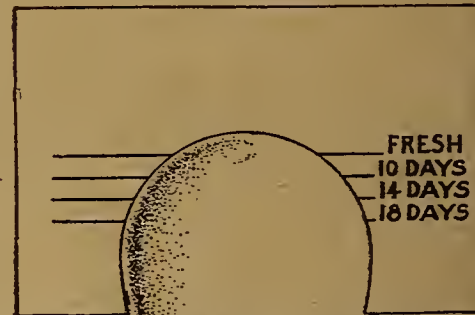
IF THERE is not the proper amount of moisture in the incubator, the eggs will not hatch properly. On the other hand, if there is too much moisture the hatch will be influenced. The proper amount can be determined by examining the eggs.

The air cell in the large end of the egg gradually grows larger as the chick develops, and the size of this cell indicates the correctness or mistake in the supply of moisture. If there is too much moisture this cell will not enlarge fast enough. If there is not enough moisture the cell will enlarge too rapidly.

The accompanying drawing shows how to make a gauge which can be applied to a number of eggs on the tenth, fourteenth, and eighteenth days and the condition determined. Cut out the oval portion and place this over the end of the egg. If the air cell is the proper size according to the lines on the indicator, the moisture conditions are right. If it is too large, apply more water; if too small, take away some of the moisture supply.

In examining the eggs they must be held to a strong light, the same as when they are being candled.

If possible get a piece of black cardboard and cut out the proper shape, using the accompanying drawing as a pattern. Draw



This card should be enlarged to three inches in width and the markings changed proportionately

lines as indicated, and then very carefully scratch the black part of the cardboard away with a sharp knife along these lines. If done properly you should be able to see the lines when used in a dark room against a light.

Eggs From Bugs

By A. J. Legg

LAST spring we began with twenty-seven guineas, twenty-two of which were hens. The year before we had twenty guinea hens and two roosters.

In 1912 we got our first guinea egg on April 19th. Last spring we got our first guinea egg on April 5th. Both years they quit laying about October 15th. Below I give the eggs we got from our flock both seasons:

	1912	1913
April	163	34
May	147	86
June	230	249
July	348	409
August	208	457
September	247	373
October	146	142

Total for the year.....1,489 1,750

We got twenty cents a dozen for most of the eggs we sold during the summer. This would make the eggs from our flock average a little more than one dollar a hen. I calculate that they pay a little profit over cost for keeping them, and they are just about the best bug and worm destroyers that I ever saw, as there are few injurious insects they will not eat.

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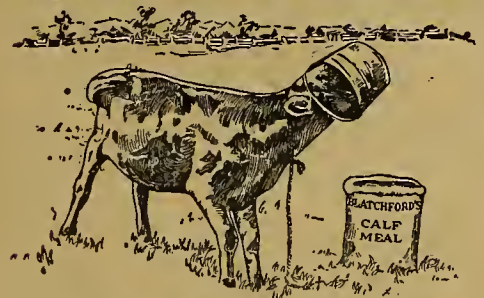
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Farm Notes

Cocks of the Walk

By G. Henry



THIS is a parable—and since the most effective editorials ever written or spoken were the parables of Jesus of Nazareth, it will pay you to read this one. It may not be a great parable, but it is a parable honestly conceived, and it relates to you and me.

Once upon a time there was a poultry-farm.

And upon this poultry-farm there were many chickens.

And a few of the male chickens had selected themselves to be bosses of the poultry-yard—cocks of the walk.

But these cocks of the walk could not agree among themselves, since each one of them wanted to be chief cock of the walk, utterly regardless of the other cocks and pullets.

So the common chickens who were quite content to go about their humble duties of scratching for food and laying eggs and raising more chicks were in a constant state of turmoil.

For the would-be cocks of the walk were everlastingly fighting—to-day this one won,

next day another won—until the humbler chickens did not know which cock of the walk to salute each morning ere they commenced their daily tasks.

Wherefore it seems mighty strange that the common, ev'ry-day chickens, who greatly outnumbered the scrappy cocks of the walk, and could easily have whipped them, did not put their heads together and say to the cocks of the walk:

"We have decided to rule ourselves."

For thus could the turmoil and bloodshed have been ended, and peace and prosperity and general happiness induced.

And what is better: those chickens amongst them who had no other ambition except to fight for their own aggrandizement would have had to go to work, which is the natural, healthful thing for all chickens and men and other living things to do.

So please apply this chicken parable to the situations in Europe and Mexico to-day.

There is no reason why Frenchmen should shoot Germans.

There is no reason why Austrians should shoot Montenegrins.

There is no reason why Mexicans should shoot Mexicans.

Kaiser Wilhelm is a cock of the walk. Old Emperor Francis Joseph is another cock of the walk who has quite outlived his usefulness. The Czar of Russia is a particularly obnoxious gamecock. Some French military men would like to prove that they are the real cocks of the walk. Some manufacturers of gunpowder and rifles and cannon would like to demonstrate that the spurs they manufacture are the spurs which win battles.

And the common chickens are asked to do the fighting, and do the dying—just because the barn-yard is pestered by several cocks of the walk who without justification consider themselves best fitted to lord it over the others.



next day another won—until the humbler chickens did not know which cock of the walk to salute each morning ere they commenced their daily tasks.

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"We have decided to rule ourselves."

For thus could the turmoil and bloodshed have been ended, and peace and prosperity and general happiness induced.

And what is better: those chickens amongst them who had no other ambition except to fight for their own aggrandizement would have had to go to work, which is the natural, healthful thing for all chickens and men and other living things to do.

So please apply this chicken parable to the situations in Europe and Mexico to-day.

There is no reason why Frenchmen should shoot Germans.

There is no reason why Austrians should shoot Montenegrins.

There is no reason why Mexicans should shoot Mexicans.

Kaiser Wilhelm is a cock of the walk. Old Emperor Francis Joseph is another cock of the walk who has quite outlived his usefulness. The Czar of Russia is a particularly obnoxious gamecock. Some French military men would like to prove that they are the real cocks of the walk. Some manufacturers of gunpowder and rifles and cannon would like to demonstrate that the spurs they manufacture are the spurs which win battles.

And the common chickens are asked to do the fighting, and do the dying—just because the barn-yard is pestered by several cocks of the walk who without justification consider themselves best fitted to lord it over the others.

To Stretch Muskrat Skins

By V. L. Dally



TAKE a piece of dry board one-half or three-eighths inches thick, eighteen inches long, and five inches wide, and plane it on both sides. With draw knife and plane, dress to shape shown in the upper illustration.

Make the board thinner at the edges, and round them a little. Now saw through the middle from A to B, and hinge at end of A. Also make a wedge from board of same thickness, about four inches long and three-fourths inch wide.

After removing the skiu, shake it free from water and let the fur dry some by leaving the fur side out. Do not let the flesh side dry yet. When ready to stretch, place skin on stretching board, with the flesh side out.

With a dull case knife remove the surplus fat and flesh. Do not attempt to remove the thin flesh near the front legs, as close scraping spoils the appearance of the dry skin.

Now put it on the stretcher and fasten with small nails, as shown in second figure, then insert the wedge at B as far as it will go without too much forcing.

When skin is dry remove nails and wedge, and the skin can be easily taken from board.

This style of stretching makes the skin look better and pack better than any other I have used.

The size of board given is an average. It is well to have some larger and some smaller, as muskrats vary in size.

It is better that you swat and miss than that you never swat at all.

Insulated Beehives

By A. F. Bonney

METHODS of honey production which apply to the professional apiculturist or the city man of leisure are not adapted to the busy farmer. I believe that the hive is the pivotal feature determining success or failure.

The hive in general use is called the dovetail hive, and is merely a rectangular box which is intended to hold the frames in which the bees build their comb. The box has a removable cover and bottom. It is made of lumber about three fourths of an inch thick. Bees may be wintered in this, but only at the cost of large stores of honey, which at ten cents a pound is worth conserving. Professional beekeepers store these hives with the bees they contain in cellars, or else pack them to winter out of doors. In the first case it takes an especially prepared cellar, one in which fresh air and temperature can be regulated nicely, while to pack for out-of-door wintering is laborious and expensive. Neither method is, I have found, suitable for the farmer. But the chaff hive fills the bill.

Formerly the cost of the chaff hive was prohibitive, but now it is offered at such a price that anyone can afford it, and they are being generally adopted, especially by farmers and amateurs.

The chaff hive is built on the plan of a refrigerator or ice box, with double walls, the spaces between walls being packed with some porous material, as chaff, forest leaves, planer shavings, or shredded cornstalks. The object is to keep the air in the spaces from circulating, for air serves best as a non-conductor of heat when confined in small adjacent cavities, like those formed by the feathers of chickens and the wool of sheep. Even newspapers crumpled up will serve for packing.

WONDERED WHY

Found the Answer Was "Coffee."

Many pale, sickly persons wonder for years why they have to suffer so, and eventually discover that the drug—caffeine—in coffee is the main cause of the trouble.

"I was always very fond of coffee and drank it every day. I never had much flesh and often wondered why I was always so pale, thin and weak.

"About five years ago my health completely broke down and I was confined to my bed. My stomach was in such condition that I could hardly take sufficient nourishment to sustain life.

"During this time I was drinking coffee, didn't think I could do without it.

"After awhile I came to the conclusion that coffee was hurting me, and decided to give it up and try Postum. When it was made right—dark and rich—I soon became very fond of it.

"In one week I began to feel better. I could eat more and sleep better. My sick headaches were less frequent and within five months I looked and felt like a new being, headache spells entirely gone.

"My health continued to improve and to-day I am well and strong, weigh 148 lbs. I attribute my present health to the life-giving qualities of Postum."

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Look up the store which shows the Red Ball sign in the window and ask for the rubber footwear which bears the Red Ball trade mark. It is your guarantee of quality. If the Red Ball is not on the goods, you are not getting "Ball-Band" quality. If your dealer cannot supply you, write us and we will see that you are supplied.

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To prepare this hive for winter all one has to do is put the super cover (D) on top of the brood chamber, the winter rim (C) on the brood chamber and fill it with packing material, and the cover (B) over all. High winds prevail here in Iowa, so I finish by putting some crate staples on to connect B and C to prevent the cover blowing off.



A Chaff Hive

A, the brood chamber, commonly called "the hive." B, cover; C, winter rim; D, super cover, which goes on hive or super under the cover for the bees to seal down for winter. E and F are queen-excluder and feeder, not used in winter. G is bottom.

Finally I close the entrance with a block ten inches long, on the end of which I put

five inches of coarse wire cloth, something a bee can go through but a mouse cannot. Mice like to get into a nice warm hive for winter. They're just like most people.

If you want to make your own chaff hives buy one for a guide, then proceed as follows:

Get good first-clear pine lumber ten inches wide, and from it cut two pieces each 15 3/4 inches long, and rabbet one edge of each board 3/4 inch deep and 3/8 inch wide, or, in other words, take away half the lumber 3/4 inch deep, as in Fig. 1. This is to accommodate a strip of tin bent as shown in Fig. 2. These are to support the frames.

Next cut two pieces 19 3/4 inches long, and nail them to the two first pieces to make a box 14 3/4 by 18 3/4 inches in size inside. This makes a Langstroth hive to take ten Hoffman frames.

To convert it into a chaff hive get out a piece of pine six feet long, an inch thick, and three inches wide. It is to be beveled as in Fig. 3, and also rabbeted 1/2 by 1/4 inch, as marked. Make a frame of this with mitered corners to just fit around the top of the hive just described.

Next get out another piece of pine 3/4 inch thick, 2 1/4 inches wide, and 6 feet long, and of it make a frame to go around the bottom of the hive. Proceed to nail on the bottom frame, using cement-coated nails and laying all joints in thick white lead.

Then get out a board nine inches wide and from it cut pieces to enclose the frame. Pack the spaces formed, then put on the upper frame, which is called a water table. This must be fastened to the hive and to the outer shell, using white lead to make good joints. A couple of coats of white lead in linseed oil finish the job.

The winter rim (C) is a frame made of boards six inches wide with the edges rabbeted on opposite sides, as in Fig. 4. This is made just large enough to fit the rabbeting of the water table on the hive.

The cover (Fig. 5) is a frame three inches deep rabbeted to fit the top of the hive and the top of the winter rim. It is covered with a 3/8-inch board cover which supports a roof of thin galvanized iron. This goes down on the sides one inch. There is an inch hole bored in each end and covered with wire cloth tacked on the inside.

TIN ROOF

The bottom is merely flooring boards cut twenty-two inches long and cleated with strips fastened on two edges, as shown in Fig. 7. Another strip goes on the end. The bottom board must be four inches longer than the hive, or thirty inches long. Some beekeepers use a shallow entrance for summer, but I find that the one three-fourths inches deep best serves my purpose.

Fig. 8 shows the entrance block with wire screen attached. It need not fit very tightly. Its dimensions are 10x2 3/4 inches.

I will mention here that cypress is a good timber for the bottom board, as it will never rot, but it is rather heavy for the hive.

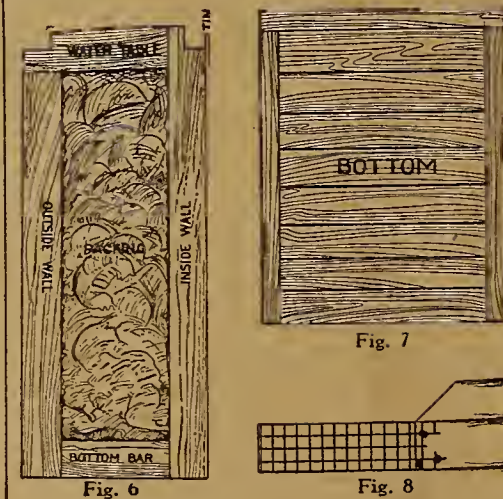


Fig. 6 is a sectional view of one end of the hive, showing walls, water table, and bottom, as well as the packed space.

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All Good-Road Bills Lead to the Treasury—How Shall It be Tapped?

By Judson C. Welliver

NATIONAL aid in building country roads is all but assured. Whether for good or ill, it is coming. Some people will denounce it as a new and peculiarly wicked pork-barrel proposition, and others will protest that it is taking away from the States a function and a duty that ought to be reserved to them. No difference. The National Government is going into the road business, and it need be no surprise if it takes the plunge at the present session of Congress. There is a widespread demand among the rural members of Congress for it.

Just to illustrate how much is doing in this regard, the first sixteen days of December saw sixteen different bills introduced in the House, for federal aid in building roads—one every day. They came from all sections and represented all kinds of approach to the question; but on one point they were all alike: they all reached in the general direction of the treasury, and did it with a good deal of emphasis.

The Men Who Are on the Job

AFTER the Shackleford Bill failed in the last Congress, advocates of the legislation set about systematically to carry their point. They made a fight for the creation of a new committee on roads, and they won. The Democratic organization established the committee, made it a first-class one in point of numbers and general importance, and named these men as its members:

Dorsey W. Shackleford, Missouri; Edward W. Saunders, Virginia; Henry A. Barnhart, Indiana; James S. Davenport, Oklahoma; James F. Byrnes, South Carolina; Hubert D. Stephens, Mississippi; John J. Whitacre, Ohio; Robert L. Doughton, North Carolina; John R. Connelly, Kansas; Edward Keating, Colorado; Claude H. Tavenner, Illinois; Peter G. Ten Eyck, New York; James B. Aswell, Louisiana; Frank L. Dersham, Pennsylvania; C. Bascom Slemph, Virginia; Solomon F. Prouty, Iowa; Thomas B. Dunn, New York; Howard Sutherland, West Virginia; Milton W. Shreve, Pennsylvania; Edward E. Browne, Wisconsin; Roy O. Woodruff, Michigan.

Mr. Shackleford's position as chairman signifies that he and his followers had their way in the making up of the committee's personnel, as well as in creating it. Therefore it is reasonable to assume that the committee will be disposed in favor of the Shackleford Bill as it now stands. This is the famous rural-route subsidy measure, and its proposal is that all roads on which rural carriers travel in delivering rural mail shall be subsidized by the Government. This on the theory that the Government's carrier is provided a road over which to travel in doing government business. The Government pays the railroad company over whose line it delivers mail, why not pay the county over whose rural highway it delivers mail? It may seem a bit odd, but one has to think quite a while to find the hole in that reasoning. As a matter of fact, the Government pays the railroads for carrying the mails, and everybody else pays them for whatever service is rendered; the passenger for riding, the shipper for the haul of his freight. The country road is open to everybody, and the Government uses it to perform a service that is of immense value to the rural community, and that that community would not have withdrawn at any price. There is really a very great difference between paying for carrying mail over railroads and paying for carrying mail over rural roads.

Would This be Like Pouring Money Into a Rat-Hole?

ANYHOW, the Shackleford Bill proposes to divide the country roads into three classes: A, B, and C. Class A roads are those permanently improved and surfaced; Class B are the intermediate ones; Class C are the plain dirt roads. It is proposed that the Government shall pay \$60 per year per mile annual toll for the use by the carriers of Class A roads; \$30 per mile per year for Class B; and \$15 for Class C roads.

The House Committee on Roads has held extensive hearings on this whole question of federal aid, and got a good deal of very frank advice from experts, who did not agree with the preconceived ideas of the Congressional authorities. Federal participation in building roads is a good deal more popular at the Capitol than at the Department of Agriculture, for instance. The Department people have a feeling that

if Uncle Sam goes into road-building his money will be poured out into a rat-hole that will never be filled, and whose power of absorbing will get greater and greater all the time. They suspect that as the Federal Government gets into the business the local partners in the enterprise will become increasingly lax about the administration of it, with the result that too much of the money will be inefficiently spent.

From the statements of the federal authorities in the subject, I gather that their notion of an effective system would be something like this:

First, set aside annually a fixed amount of federal money to aid the States in road construction. Distribute this sum on the basis of area, population, and road mileage, giving equal weight to all these elements in the case of each State.

Then let the Federal Government deal only with the State Government, and hold it responsible for the proper use of the money. Require each State, before it gets any of the money, to create a state highway department which shall have full power to select the particular road that is to be improved.

The road being selected by the State, the particular character of the construction or improvement would be determined by agreement between the federal and the state authorities.

Next, the State would be required to put up dollar for dollar of the cost, to match every contribution made



by the Federal Government. If Uncle Sam were putting a million dollars into Ohio, Ohio would have to put in another million.

The federal road authorities would have supervision and final authority over the construction. Work must be done in accordance with their specifications. The state road department would have to subordinate itself, at this point, to the national. There would be no state politics, no contractors' graft, no good things for friends of the State Government in any road work to which the national purse contributed.

The results from such a system would be decidedly interesting. First, the state authorities, having no chance to gain any political advantage, would be jealous to insure that they got the full worth of every dollar invested. Each partner would be watching the other with lynx eyes. The system would include an unqualified requirement that, once constructed, the maintenance of the roads should be attended to by the State; but this, again, would be under federal supervision. If a particular State permitted its permanent roads to fall into disrepair, national money would be shut off until conditions were bettered.

These restrictions would prevent the thing degenerating into a federal pork barrel. Congress would not be able to give away more money than the States wanted, and the States would not want more than they could duplicate.

Here's an incident that suggests the effect federal control would have on the conduct of state road work. In the last bill making appropriations for the Department of Agriculture there was included an item of \$500,000 to be expended by the Office of Public Roads, in experimental construction work in various States. It was provided that any part of this apportioned to a State must be matched with an equal amount by the State, and that the work should be done by the federal authorities.

When the legislation passed, New York and Pennsylvania were engaged in big road-building campaigns, and spending great sums of money. It was natural to presume that each of them would apply for a slice of the federal fund and agree to the conditions.

"I'll venture that neither of those two States will ask for or accept a dollar of that money," declared a federal official who was familiar with the road operations in both of them. This was very soon after the appropriation had been made.

"Why not?" was asked.

"Because the road-building authorities of those States are too deep in politics. Their roads cost too much. Do you suppose their highway departments want us to go in there and build roads for \$12,000 a mile, just as good as the States are getting for \$16,000 and \$20,000 a mile? Not on your pastel portrait."

They Wanted to Spend Lots of Money

IT SOUNDED like a reckless guess, but the event proved it was correct. Neither State asked for any of the money, and finally each was offered a slice, if it cared to meet the conditions. Both refused it!

That happened long before the recent scandalous revelations about graft in the road-building work in New York. The federal people merely knew what roads were costing in New York, under exclusive state control; knew they were costing altogether too much; knew that there would be a good deal of uncomfortable questionings if it were proved that those roads were costing from thirty-three to fifty per cent. too much. If New York had had that demonstration a few years ago the road department of the State would have been overhauled, and millions would have been saved.

Of that half-million-dollar appropriation parts were assigned for work in Maine, Maryland, Virginia, North Carolina, Mississippi, Ohio, Tennessee, Minnesota, and Iowa; all kinds of climate, soil, materials, and kinds of construction being represented in that range.

The outline which I have given of a scheme for co-operation between state and federal authorities represents about what the Agricultural Department would like. It has been urged upon the House committee with apparently a good deal of effect. Without doubt, the scheme of subsidizing rural-mail roads has been weakened a good deal by the common-sense views that have been expressed to the committee by Secretary Houston, Director of Roads Page, and others. These gentlemen are supremely concerned that if the National Government is to get into road-building it should do so on a proper basis.

The postal authorities estimate that the rural carriers travel over an aggregate of 1,100,000 miles of roads. It is calculated that under this bill the average payment per mile would be \$30; therefore something over \$30,000,000 a year would go out.

The payments are to be made to the counties, not the States. Each county would get its little slice from the federal treasury, according to its mileage, and presumably it would go into the roads. But by the time it had filtered down to the particular mile it would be spread out mighty thin. Twenty dollars on a particular mile, or \$2,000 on a particular hundred miles, would produce no very appreciable results; and opponents of the legislation insist that in actual operation it would be of almost no practical use at all. It would be a pleasant testimonial to the counties that Uncle Sam felt a kindly interest in them; that's about all.

What Roads Really Need Improving?

THERE is another objection that has been urged to this proposal. The average rural route is a winding and circuitous affair that trails about the country with the general purpose of keeping the carrier going where the people are and reaching as many as possible per diem. Part of the route is over important highways, a good deal more is commonly on back-country roads that, even if improved in any important way, would not accommodate much traffic. It is nowadays accepted that state and federal money, if they are to be devoted to this business, ought to go into the important roads, carrying the heavier traffic and accommodating on the whole the greatest number of people. The back-country roads would be left to feed the main highways, and to be maintained by the local community. This plan seems logically correct.



The Burden of Yesterday

By Adelaide Stedman

Illustrated by R. Emmett Owen



"Go, son . . . there's always one friend watching and waiting"

Synopsis of Preceding Chapters

The path of true love is running very rough. Faith Hamilton, a young and exquisite girl, who for several years has supported herself and her younger sister, Bernice, by teaching, has lost her position, and before finding another has become engaged to William Drake. Drake is a prosperous business man, but his home life is both expensive and inharmonious, for he supports his selfish, widowed sister-in-law, Laura, with her two little daughters, and his mother. Finally a relative, Jobyna Price, offers Laura and one of her children a home, but Laura, in order to escape an unwelcome arrangement, pleads that she cannot separate herself from her other child, Florence. Then Drake's mother makes a supreme sacrifice in asking Jobyna Price to take Florence too.

Ernestine Cumnock is the daughter of a rich cow-puncher, and has fallen in love with Drake's secretary, Robert Lewis. Suddenly she discovers—that he believes she has known all along—that he was once convicted in the Children's Court of the theft of three cream puffs. She is indignant at what she judges to be his deceitful secrecy regarding this episode, and turns from him to another lover, Kirk Hazleton. Suddenly Robert recognizes in this boy his companion in the juvenile theft.

Chapter XVI.

ROBERT'S discovery led to real temptation and bitterness. Should he tell? Every day during the week following that memorable supper the boy asked himself that question in an agony of spirit. It would certainly be a satisfactory revenge to prove that the man Mr. Cumnock so openly favored had committed the same misdeed for which he had suffered so much, only Kirk had not been caught.

It was a hard struggle, but he felt instinctively that here was his first chance to prove of what stuff that contested character of his was made. It would be low to reveal the childish prank Kirk had so evidently forgotten. Besides Ernestine seemed to love Kirk. He must consider her happiness.

So at the week's end he matured a plan born of his sudden restlessness and low spirits.

"Sir," he said to Mr. Drake, as they sat together in his employer's private office, "I'd like to go away for a while, if you have no objection."

"Go away?" Mr. Drake repeated in astonishment.

"Out West. I mean on a ranch, or somewhere."

Mr. Drake was profoundly troubled. Had the boy lost his nerve? Was he ready so soon to give up the fight?

"For how long?" he questioned briefly.

"I don't know. That depends on how soon I learn—"

Mr. Drake frowned. He had grown to rely on Robert.

Ernestine's feelings toward Robert were so mixed that it was quite beyond her to classify them. But gradually, out of the jumble of uncertainty, a desire to see him took definite form. She was very sure that she wanted to give him another chance to eat humble pie, explain her father's contemptuous charges, and be forgiven. So she telephoned Faith and artfully inquired what her plans were for the day.

"I haven't any except—to be happy!" her friend laughed.

"Then you'll come shopping with me?" she questioned eagerly.

"Not to-day, dear," Faith answered regretfully. "You know that Robert is leaving for the West at noon."

"What?"

"Didn't you know? He's going for an indefinite stay. Will's sure to miss him awfully, but he seems to approve of his going."

Ernestine caught the faint regretful tone in Faith's words as they sounded. "But there's really *nothing* to keep him, is there?"

"No, nothing!" Ernestine ended the conversation hastily, rushed to her room, and gave way to a passion of crying. But she had in her much of her father's pride, and even to herself she would not admit that her love for Robert had endured.

That evening she was nice to Kirk—with a difference, a difference which set him dreaming as he tramped home in the moonlight, but Ernestine, left alone, cried again, picturing Robert on the outrushing train, and hated herself for crying.

Meanwhile Laura watched with unspeakable chagrin the happy progress of her brother-in-law's engagement. Incapable of being honest, even with herself, the justification she adopted now was the thought that it was positively cruel of Will to think of separating Florence from her grandmother.

Jobyna Price had insisted that Mrs. Drake should take a month to be sure that she wanted to give the child up, and it was soon apparent to watchful Laura that each night of the allotted time, as it passed, found her mother-in-law's pillow wet with tears. Laura dared not say anything or even show that she noticed the older woman's distress, for then it would surely seem *her* duty to make the sacrifice instead. But she determined that Will should know his mother's state of mind. She proceeded to instruct little Florence to be more loving than ever to "poor dear grandma," hoping thus to provoke in Mrs. Drake some open expression of her suffering.

As a matter of fact, as the weeks passed, Drake was uneasily conscious of his mother's altered appear-

"Why do you want to go, boy?"

"To—find myself."

"Not—lose yourself?" Drake's hand shot out in its familiar gesture and grasped the boy's shoulder.

"No, sir." Robert's eyes met Drake's fully. "I've heard you say that out in the open country—it's *what* you are, not who you are that counts, and I—need a new stock—of—self-respect. That's all, sir."

He spoke awkwardly, striving to express the deep thoughts which were in his mind of right, and justice, and the tangled skein of life.

But Mr. Drake was still troubled. "What about Ernestine?" his eyes questioned, though his lips were silent.

"There is nothing but my work to keep me here," Robert responded to the look. "I—asked—Miss Cumnock—to allow me—to explain—and she refused, so that's over—sir."

He tried his best to speak composedly, but Mr. Drake felt the quivering wound of the boy's first love throb at every word he forced himself to say.

"Go," the man urged quietly. "Go, son, just remember there's always one friend watching and waiting for good news from you."

ance and manner, bravely as she strove for self-control, but he fought back his doubts, dreading the consequences of admitting them.

Three weeks passed in this way, bringing him to a quiet Sunday evening he never forgot. He and Faith had been together all day and were about to go to a concert of sacred music.

Going to his room to get ready he passed his mother's half-opened door, from which the light was streaming into the unlit hall.

Standing silently in the concealing gloom he saw his mother sitting in her big old-fashioned rocker, with little Florence in her cotton flannel nightdress curled up in her arms. She was rocking and crooning an old lullaby which Drake, from some recess of memory, seemed to hear her singing to Herbert, when he lay in her arms, with the same waving brown hair and soft eyes as those now staring up at Mrs. Drake, clouded with sleepiness. And he saw the slow, quiet tears of age trickling down her cheeks, falling on the bright curls and being surreptitiously wiped away with a hand as tremulous as it was gentle.

"Grandma," sounded the child's voice, "will Aunt Jobyna rock me?"

"I don't know, sweetheart."

"Why not?"

"She never had a little girl. She—just—might not—think of it."

"I think grandmas are much nicer than aunties. I don't want to go away."

Her son saw Mrs. Drake's arms tighten spasmodically around the soft little body, and a gleam of triumph lightened the sadness of her face.

"Oh, yes, you do! Think of the garden—and the horses and carriages—"

"But I want *you*! I wouldn't let Aunt Jobyna hear my prayers. You see I tell God secrets nobody but you know about."

"Your—your mother'll hear your prayers dear."

"Mother! Oh, she wouldn't!" There was amused surprise in the child's voice.

"Then you say them all alone, dear," Mrs. Drake counseled, "and just know that Grandma is thinking about you."

"How'll I know?" the little voice faltered.

"Grandma promises to come up here every evening at eight o'clock—and she—she'll say her prayers too—and—and try to be happy in knowing how good and happy her little Florence is—and—it'll be almost—as if—we were together! Won't it, darling?"

The man had listened to this dialogue with a shaken heart. He could not, dared not, take from his mother her one happiness. Without Florence her life would be empty—and short.

What could he do? It seemed to him he had been asking himself that question from the day he had met Faith.

He asked it again as they walked home together after the concert, and the girl in pity of his despair answered suddenly:

"Why can't I just come to the apartment and all of us live together?"

"Would you make such a sacrifice?"

"Of course," she laughed, delighted to see the care lifting from his face.

"I'm afraid, Faith," he demurred, "it won't be easy—"

Chapter XVII.

THE various members of the Drake family felt as if they had been living on a volcano all summer. Plans had changed with almost every week. So when Faith consented to come and live with them even Laura said, with a moment's real gratitude:

"Thank Heaven! Now we can all settle down and live in peace!"

But somehow peace refused to descend upon them. The tension would not relax.

Little Bernice had returned and Drake insisted that she and Faith should dine with them almost every evening. These dinners should have cemented the intimacy between Faith and her new relations, but the family atmosphere refused to return.

A dozen little incidents occurred in rapid succession which made Drake's flesh creep with nervous vexation, yet which seemed to be nobody's fault, and to be noticed by no one except himself.

One evening, at dinner, a dish of fruit was brought in, containing only one peach, rosy-cheeked and luscious. As the elders did not take it the three children immediately fastened their eyes upon it. Laura saw the little tableau, and settled the question by smilingly handing the fruit to Bernice with a warning look at her two little daughters. Faith flushed.

"Bernice," she requested softly, "divide it, dear," and the little girl obeyed.

That was all, but no one seemed to be able to banish the constraint which was like a presence in the room.

Again there was chicken for dinner. Mrs. Drake noticed, from the head of the table, that Betty's plate was untouched.

"Why don't you eat?" she asked. "Chicken is good for you."

"I don't like a leg."

Laura immediately broke in with seemingly embarrassed haste: "*Somebody* has to eat the drumsticks, dear."

"Nobody used to."

Again came the disturbing silence which Drake so dreaded.

Such little incidents collectively were stored up in Faith's consciousness, though she said nothing. Her realization grew of the difficulties of her position, but her love for the man she had chosen grew too, and took on a touch of reverence. He was good as few men were good. They were seldom [CONTINUED ON PAGE 29]

Food Value of Cheese and Some Recipes

By Katharine Briggs

CHEESE has always been considered a somewhat taxing article of diet suitable only for the fortunate possessors of vigorous digestions. But this popular idea seems to be unfounded, for listen to what one of Uncle Sam's experts in nutrition says of this article of food: It seems to be the general opinion that the body expends more labor in assimilating cheese than is required for other comparable foods. In reality it is as easily digested as meat and has about twice its muscle-making value. An ounce of cheese is equivalent to one egg, a glass of milk, or two ounces of meat, and because of the economic possibilities in its substitution for meat the wise housekeeper will find it advantageous in these days of high prices to use freely this neglected food staple. The reason it is not more commonly used in this country is probably due, for one thing, to a matter of habit, which makes the meal seem incomplete unless it includes meat, and for a second reason to the fact that housewives, through lack of experience, are much less skillful in the arrangement of bills of fare in which cheese is the central food than they are in the arrangement of menus where meat is thus used.

In order that the diet may be well balanced, cheese, if used in quantity, should replace foods of similar composition rather than supplement them. The builder who has a choice of materials must have a knowledge of their relative properties if he wishes to use stone instead of brick, or wood in place of iron. It is the same with the housekeeper who wishes to use her available food-supply intelligently, and whose choice of foods is influenced by their relative cost at a given time or season. In planning meals, therefore, of which cheese dishes are the chief features, housekeepers should take care to diminish other fat foods in order that the meals may not be unduly hearty.

With a cheese dish as the central feature of the meal it is wise to supply crisp, watery vegetables, watercress, celery, lettuce served with a dressing or with salt alone, or simple fruit salads, and preference should be given refreshing fruits rather than what are known as heavy desserts. Then, too, whether raw or cooked, cheese is likely to be somewhat soft, and so it seems to call for the harder kinds of bread, such as crusty rolls, zwieback, rye bread, harder brown breads, crackers, and the like, or cereal breakfast-foods.

Some housewives complain of the difficulty they have in keeping cheese. One of the best ways to keep it after it has been cut is to wrap it in a slightly dampened cloth and then in paper, and to keep it in a cool place. To dampen the cloth, sprinkle it and then wring it; it should seem hardly damp to the touch. Paraffin paper may be used in place of the cloth. When cheese is put in a covered dish the air should never be wholly excluded, for if this is done it molds more readily. The small whole cheeses may be kept satisfactorily by cutting a slice from the top to serve as a cover and removing the cheese as needed with a knife or cheese scoop. The cheese below the cover should be kept wrapped in a cloth.

In preparing cheese it will be found in most instances more convenient to use a coarse grater having slits instead of the usual rounded holes, for such a grater, in spite of its name, shaves the cheese instead of grating it, and when cheese is soft this is an advantage, since the grater does not get clogged. It is well to remember, too, that since cheese needs very little cooking when used in combination with onions, chives and green peppers, which are excellent flavorings for it, these should always be previously cooked, either by stewing in a little water, or by cooking in butter. The seeds, of course, of the peppers should be removed before cooking. Other good flavors are mustard, curry powder, onion juice, chopped olives, pimento and, according to European recipes, nutmeg or mace.

A large variety of roasts may be made by combining cheese and legumes, either beans of various kinds, cow-peas, lentils or peas.

Combinations of Cheese and Cheese-Curd—Dishes in which cheese and cheese-curd occur in combinations suitable for dessert were once very common, as reference to the cook-books of our mothers and the handed-down recipes of our grandmothers will show. And as both flavor and richness is contributed by the cheese they are well worth adding to the present-day menus.

Boston Roast—A Boston roast is made by mashing one pound can of kidney beans or an equivalent quantity of

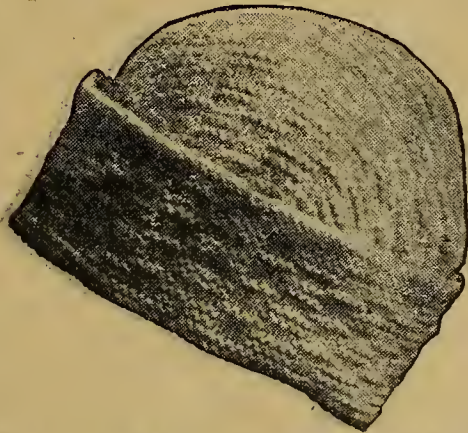
cooked beans and adding one-half pound of cheese, a little salt and sufficient bread-crumbs to make the mixture stiff enough to be formed into a roll. This should be baked in a moderate oven, basted occasionally with butter and water, and served with a tomato sauce. This dish may be flavored with onions, chopped and cooked in butter and water.

Walnut Roast—In combination with English walnuts cheese makes a most nutritive substitute for meat at dinner. Cook two tablespoonfuls of chopped onion in one tablespoonful of butter and a little water until tender. Then mix one cupful each of grated cheese, chopped nuts and bread-crumbs together, and moisten with the water in which the onion was cooked; add salt, pepper and the juice of half a lemon, pour into a shallow dish, and brown in the oven.

Cheese-Jelly Salad—Cheese-jelly salad is especially nice. To one cupful of whipped cream add one-half cupful of grated cheese, seasoned to taste with salt and pepper, then add one scant tablespoonful of gelatin dissolved in a cupful of water. When the jelly begins to harden put it into shells made from hollow tomatoes or peppers, and cover it with grated cheese. Serve on lettuce-leaves with whipped cream to which a little grated cheese has been added.

Celery Baskets—To serve as a relish at the beginning of a meal, stalks of celery having deep grooves should be cut in pieces about two inches long and the grooves filled with cream cheese salted

Boy's Cap with Flat Crown



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or flavored with chopped pimentos and served with saltines.

Cheese as Shortening—Few housewives would think of combining cheese with dough, batter or pastry, and yet when so used it replaces in whole or in part with its fat the usual shortening, butter or other fat. Using cheese in this way is, too, often an economy when eggs are scarce, as its protein takes the place of the protein or albumin of the eggs. Better results will be obtained if soft cheese is used, which can be worked into the dough in much the same way as butter or other shortening.

Cheese Biscuit—An excellent cheese biscuit is made by sifting together two cupfuls of flour, four teaspoonfuls of baking-powder and one and one-half teaspoonfuls of salt, then with a fork or the fingers work into it one quarter of a pound of cheese, and add gradually about a cupful of water. It is impossible to give the exact amount of water, as flour differs in its capacity for taking up moisture. Toss the dough on a floured board, roll out and cut with a biscuit-cutter. When in the pan sprinkle over the top a bit of grated cheese.

Cheese Custard—Cheese custard is made by mixing one-half cupful of cream or rich milk with one cupful of grated cheese and heating until the cheese is melted, then removing from the fire and adding the well-beaten yolks of two eggs and a speck of salt and paprika. Bake in paper cases or buttered ramekins, and serve with jelly or preserves.

Cheese Gingerbread—Cheese gingerbread should often find its way into the lunch-baskets of the children, for not only is it tasty, but very nutritious. Heat in a double boiler a cupful of molasses and four ounces of cheese until the cheese is melted, then add one teaspoonful of soda, and beat vigorously

for a moment. Mix and sift two cupfuls of flour, two teaspoonfuls of ginger and one-half teaspoonful of salt, and add them to the molasses and cheese alternately with one-half cupful of water. Bake fifteen minutes in small buttered tins.

Curd Tarts—Tarts made from old-fashioned curd make a dish not often seen. Warm a quart of milk, and add one and one-half rennet tablets dissolved in a tablespoonful of water. Let stand until the curd forms, then break up the curd, and strain off the whey. Add to the curd one ounce of sugar, the yolks of two eggs, a speck of nutmeg, one and one-half ounces of butter and one ounce of dried currants or small raisins; line patty-tins with pastry, fill with the mixture, and bake.

Golden Betty—To make brown betty with cheese, arrange in a deep earthenware dish alternate layers of bread-crumbs and thinly sliced apples; season with cinnamon, a little clove and brown sugar. Scatter some finely shaved mild full-cream cheese over each layer of apples, and when the dish is full scatter bread-crumbs over the top, and bake thirty-five to forty minutes, placing the dish in a pan of water so that the pudding will not burn. If preferred this may be sweetened with molasses mixed with an equal amount of hot water and poured over the top, a half cupful of molasses being sufficient for a quart pudding-dish full.

Apple Rarebit—Apple pie made with a layer of finely shaved cheese over the seasoned apple and baked in the usual way is liked by many who are fond of cheese served with apple pie.

Cuban Sandwiches—The Cuban sandwich may be described as a kind of club sandwich with cheese, for it is usually made large so that it is necessary to eat it with a knife and fork. It may be made, too, in such proportions as to supply a large amount of nourishment. Cut the crusts from slices of bread, and between them lay first lettuce with a little salad-dressing or salt on it, then a slice of soft mild cheese and finally thin slices of dill pickles or a little chopped pickle.

Melt-in-My-Mouth Sandwiches—Another delicious sandwich is made by mashing American cheese and adding to it salt, a few drops of vinegar and paprika, a speck of mustard and a little anchovy essence and spreading this between thin slices of bread.

Sizzled Sandwiches—Plain bread-and-butter sandwiches with fairly thick slices of cheese put between are made more tasty if the cheese is browned in a pan in which bacon has just been fried.

Book Reviews

Chemistry and Its Relation to Daily Life, by Kahlenberg & Hart, tells in a simple way how and of what materials the various articles of commerce are made. Though intended as a textbook for secondary schools, it will give any careful reader a good knowledge of chemistry as it affects his daily life. Well illustrated with photographs. The Macmillan Company, New York City. 375 pages. Price, \$1.25.

Farm Gas Engines, by Hirshfield & Ulbricht, is a new 230 page book explaining the construction of gas engines. Its discussion of oils, lubrication, and farm power makes it also of general interest to farm mechanics. The book is devoted to the theory of construction as well as to the actual working of engines. John Wiley & Sons, New York City. Price, \$1.50.

The Studebaker Almanac for 1914 is a most useful little pamphlet. It contains scores of hints on all farm and household matters in addition to the usual weather and almanac signs. Copies may be had free of charge upon application to The Studebaker Company, South Bend, Indiana.

Productive Swine Husbandry, by George E. Day, is one of a series of very practical books published by J. B. Lippincott Company, Philadelphia. This is a thoroughly reliable book. Well illustrated.

Soils and Crops, by T. F. Hunt, now of California, and Charles W. Burkett, editor of the "American Agriculturist." This is a textbook and is adapted chiefly to study rather than reference. Well illustrated. Orange Judd Company, New York City. Price, \$1.50.

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The Story of a Good Mother

By Lilly M. Johnson

TO GIVE five dear children "a chance" and to pay for a wee farm is a big undertaking for even a brave-hearted woman. Yet pluck counts for much, a mother's ambition for those she holds precious is mighty, and a pair of hands willing to learn skillful ways may tip the scales of achievement. This is why Anna Ammerman is winning out.

Last autumn I became acquainted with the fact that by going to a certain stand in the Northside Market, Columbus, Ohio, one could buy *real home-made jelly*. Needless to say, I became a steady patron, and now I have the honor of knowing this brave, true-hearted woman who is making a success of what many would call an unpromising field of effort.

The Home

The road to the fourteen-acre fruit and vegetable farm lies beyond the main highway, down a lane bordered with meadows, and dips downward toward the creek which her farm borders, and which, a little later on when she can see her way clear to stock it, will prove a paradise for ducks.

The first time I started toward her home I knew only that I was going to see a woman who made good jelly; but before I had gone far along the country roads I learned some of the facts I have already related, for, in reply to "Will you please tell me the way to Mrs. Ammerman's," I was always greeted with a smile and replies which spoke volumes.

Near the end of the lane an opening in the fence and a path showing the marks of childish feet, together with the shrill laughter of children as they romped with their playmate and guardian, a large Newfoundland, soon led me to the story-and-a-half weather-worn home which shelters joy as well as struggle, love as well as care.

Rover, as guardian, bounded toward the stranger, growls and threats rumbling in his throat to be softened when, upon closer approach, he learned I was a friend, for a dog's instinct recognizes foes or lovers very quickly.

"Now isn't it nice that Rover likes you. He doesn't often make up with strangers," were the first words that greeted me as Rover and I climbed the rise, past the never-failing spring, to the tiny homestead where the five children and Mrs. Ammerman stood. "You see, Rover looks after us, and he don't often make up. We have to have him that way; but he's very good to the children. We couldn't do without Rover, could we?" and she patted the shaggy head upturned to her face. Rover understood, replying in doggish language, after which he laid down upon the grass and went to sleep, knowing nothing would harm his family. The rest of us sat down on the steps of the porch.

"I lived in Columbus a good many years," Mrs. Ammerman said. "You see, I've been married twenty. This is my oldest girl, she's eighteen, and almost through the business course. Pretty soon she'll be earning her own way and helping the other children. She's such a comfort to me." Pride thrilled through every word.

The eldest daughter smiled, patted her mother's hand, then held out her arms for the baby, a fair-haired round-faced boy, as she said, "Let me hold him, Mother." But Boy wanted to stay, and so gurgles punctuated the story of how a woman can win when faced by apparent failure.

A Chance for the Children

"When I lived in Columbus I had a stand on market. I bought my stuff from the commission men. Yes, they've always treated me fair. You see, I couldn't stay home like most mothers, for I had to earn a living for the family. And when it was so I couldn't go to market I would make comforts and quilts. I've always found a way to help make the living. I was obliged to. The children had to be given a chance even if their father couldn't help them as much as he would like, for you see my husband's never been strong enough to do active work."

A long pause followed, while the blue eyes gazed through the doorway out upon the land she is striving so hard to win.

"I never had a chance," she added, "and I want them to. A couple of years ago we heard of this place, and as the children were sickly the doctor said maybe if we'd go to the country they'd get well and stay well. So we packed up and came out. And we've all been healthy ever since. Besides, the chil-



The children who have a chance

dren love it out here. The lady who owns the place is so nice and kind. She's letting us pay for it as we can. And some day it will be ours, I'm sure. We have fourteen acres in general crops, vegetables and orchards. Our land raises fine potatoes, nicer than any place about here. We have one hundred and fifty trees altogether in our orchards. We have Kieffer and Bartlett pears



"Yes, there is a good demand for my jellies"

which we sell direct to city customers, keeping a few for home use. They are young trees and not yet bearing heavily. Our apple-trees are Early Transparent, Baldwin, Northern Spies (mainly) and some Bellflowers; these are not yet bearing, but when they do—"

Again the far-away look came into the blue eyes as she hugged the baby still closer.

"We also have a young cherry-orchard. As soon as it comes in bearing I shall



"You see Rover looks after us"

can them. There's a good market for canned cherries. Our grapes are Concord and California White, and are doing nicely. The best apple jelly is made from the Bellflowers. As our trees are not yet bearing I buy them by the barrel from a commission man. I also buy my currants by wholesale.

"I knew I could make good jelly, so even before we came to the country I used to make a few glasses to sell. I didn't label them for a long time. Why, several grocers handled my jelly for five years before I had labels made.

"Last summer I made over five thousand glasses of grape, apple and currant jelly. When juice was prepared the day before I have made as high as two hundred glasses in one day. My recipe is the same for all kinds of jelly. I use a large kettle to put the fruit in (apples cut and cored, and grapes and currants stemmed). I then add sufficient water to cover, boiling until tender, when I strain the juice. Sometimes it is necessary to strain twice. After straining I measure equal quantities of juice with cane-sugar, boiling until it jellies. I find that if I use beet-sugar I never have good results, as the jelly always sours. I always use granulated. After the jelly has "set" I cover it with parowax and tin lids. The children are a great help, for they paste the labels. Yes, there is a good demand for my jellies, and when I get fixed so that I can I shall enlarge my output. Then too, this is such a good farm for everything. Don't you want to look around a bit?"

The Farm

Of course I wished to see her kingdom, so she gave the baby to one of the children, while two of the others, Mrs. Ammerman, Rover and I made a tour of the fourteen acres.

When I told her I thought the fruit-trees would do better were the ground cultivated instead of being left in sod, she said, "Yes, I know, and as soon as I can I am going to have a man helper to do the work which the girls and I cannot."

A little later, after we had examined the field of vegetables, the potato patch, and had seen the never-failing spring gurgling into the stone spring-house which she and the children are going to floor with stoves this summer, we reached the creek which, perhaps next summer, will be the happy hunting-grounds of ducks.

"Columbus people like ducks, and there's always a good market for them. The trouble with me is I've not yet been able to buy a sufficient number to begin raising them, but I'm planning to."

We wandered back to the house via the green strip where Friendly Bill, the horse, was restfully nibbling his Sunday lunch.

"We had a cow, and she was such a nice one too, but—but we owed a debt, it was twenty-two dollars—and we couldn't pay it right away, so the man, he's a farmer up on the main pike, made us sell her to pay the debt. He didn't seem to care about the children needing the milk; but I guess we'll manage somehow. I'm going right on. I've often had drawbacks, and I expect I always will, but I've got the children to fight for, and people are kind. It's only been the one man who's not seemed to care, but then maybe he don't quite understand. And the older children will soon be through school and able to help the younger ones. If I just don't have to give up our home."

"Heart Within and God O'erhead"

"I hope what I've told you will help someone else. And it will if they will go ahead just as I've told you. When your jelly's good you can sell lots of it. My sister out in California tells me the people out there are as wild about good jelly as they are around here, and I expect they're that way every place. So many women could build up a good trade if they were just told how. I'd like to help other people if I could. There's another nice thing about making jelly, you can stay home with the children while you are earning money, which a mother entering business life considers an asset."

Those fourteen acres hold possibilities which Mrs. Ammerman recognizes. Knowing their promise, she will not release her grip upon them; but, aided by the children, she is determined to extend her trade in jelly and add duck-raising to it. May her vegetables flourish and her orchards yield bounteous harvests!

Yes, Madonnas still live: women who are crowned with the halo of triumphant motherhood which strives and sacrifices, loves and hopes, and by these keep the children safe.

Sunday Reading

Overcoming Evil

By Anna B. Taft

THE best way to fight existing evil is to follow that good old maxim, "Overcome evil with good." Here is the way one man followed that advice. He was a young minister, with a keen mind and a big heart, and he was called to be pastor of a little church in one of the Southern States. His parish consisted of a group of farmers who were tilling the land ignorantly and wastefully. The people were strong individualists, suspicious and jealous of one another, and the community seemed totally lacking in co-operative spirit or local pride. There were three distinct needs the minister must meet through the church, if it was to be the servant of the people. First, they must become better farmers, if they were to get a decent living from the land; second, they must learn to work together, if they were to build a community; and lastly, the church must have definite support, if it was to be a power.

Fortunately this young man was wise enough to realize that evangelism wouldn't solve this particular problem. Let me tell you what he did. He gathered the people together to discuss how the church could be maintained. He suggested that they take a little piece of land belonging to the church property and also rent an adjoining piece and till these together for the support of the church. He insisted that the members should not contribute work individually, but that they should do the work together, making a real community enterprise of it. The women of the church were invited to contribute their help and encouragement by furnishing a dinner on the days when the farmers had their "bee." All accepted the plan, and several were enthusiastic.

The pastor asked assistance from the State Agricultural College, which sent a man to superintend the preparation of the land and direct the planting, giving advice and instruction regarding the future care of the crop.

In this simple way, all unrealized by the people, he was meeting their three greatest needs. The expert was teaching the people better farming, the common task brought them together, helped them to become acquainted, and increased the interest in common labor. Last of all, the marketing of the crops helped materially to support the church. Beyond even these good lessons this master of men had taught them that great lesson, that the church is deeply and fundamentally concerned in the every-day life of the people and that, like its Lord, it comes into the community to give them "life more abundantly."

The Good Samaritan

Sunday-school lesson, January 18th: The Good Samaritan. Luke 10, 25-37. Golden Text: Thou shalt love thy neighbor as thyself.

THE road from Jerusalem to Jericho winds through a desert country, making sharp turns about rocks and hillsides, with no dwellings to break the desolate landscape. To this day it is infested by robbers, and parties going to and fro between the two cities take a Turkish guard. So that a victim of bandits, left by the roadside, could have been no unheard-of incident in the time of Christ.

That wonderful summary of the law of righteous living had just been spoken, and the clever questioner, who could pick

no flaw in the first clause, "Thou shalt love the Lord thy God with all thy heart and with all thy soul and with all thy strength and with all thy mind," paused over the second.

"Who is my neighbor?" he asked. He must have been a city man, that lawyer. Village folk and those of the open country have no need to be asked the meaning of neighbor. It means not only being kind to one's friends. It means having a care and an interest for everyone in the region; being ready to aid if there be trouble; eager to congratulate if there be joy. The bond between neighbors is less personal than that of friendship, but it is a tie the strength and loveliness of which everyone understands who has ever been forced to leave an old home. We are neighborly not because we are especially drawn to one another, but because we are human beings, near one another, living under like conditions.

That wounded man was doubtless a Jew. It was not convenient, nor even safe, to stop on this dangerous road. The

Bethany

Sunday-school lesson, January 25th: Luke 8, 1-3; 9, 57-62; 10, 38-42.

Golden Text: Inasmuch as ye did it unto one of these My brethren, even these least, ye did it unto Me.

BETHANY is a hamlet perched on the shoulder of the Mount of Olives. It is the last group of houses on the road to Jericho, and commands the most beautiful of the views of Jerusalem. Here was a home, like that of Peter at Capernaum, where Christ was always welcome, and where He often stayed. On this particular visit many had gathered to hear Him. Indeed one fancies that the guests had been especially invited for this meeting, so that the sisters were indeed hostesses, and there had been much to do in preparation. Housekeepers out in the country in Palestine had quite the same sort of cares that housekeepers out in the country anywhere and at any time have, and Martha's state of mind is perfectly clear. The making of guests comfortable

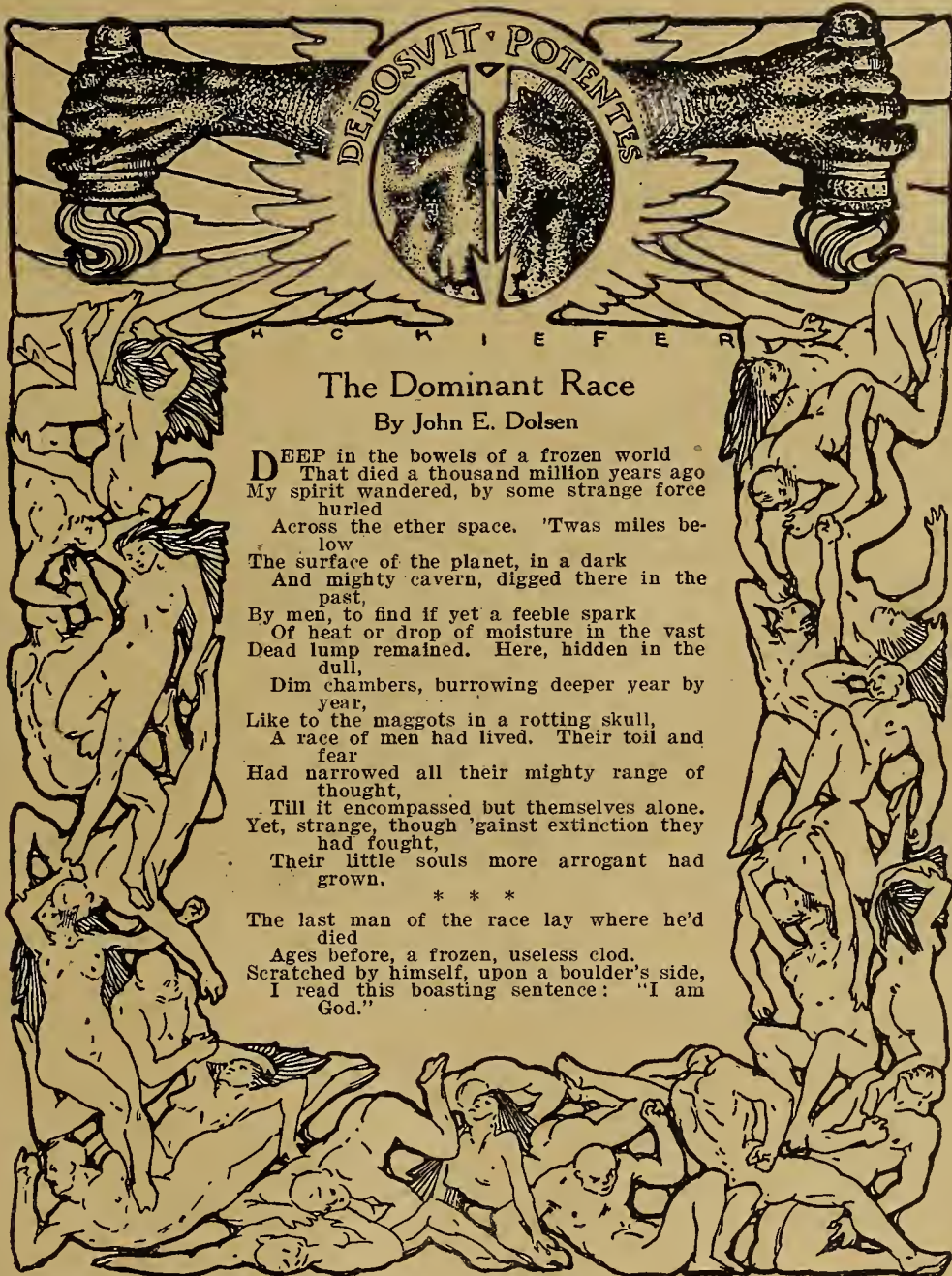
is so obvious a duty that sympathy has gone out to her without consideration of the meaning of the incident.

Now there are housekeepers who in their determination to have everything perfect have grown far more interested in things than in the life that things are meant to serve; more interested in the cookery than in the conversation about the table; to whom household affairs are so large that they hide the rest of the universe; whose interests are fairly bounded by questions of shelter, food, and garments. Unselfishly laborious are these mothers and aunts and grandmothers, and we so well like the results of such devotion to our bodily comfort that we are quite willing some should make the sacrifice, and can hardly reward their care with blame. Neither could the Great Teacher, if you will but analyze His gentle reproof.

Martha's difficulty was that she looked down, not up. One cannot seriously believe that the Lord commended Mary for neglecting her share of needful work. Rather one must in reason suppose that she had done what was necessary before the coming of the guests, so that she might be free for that great hour that was never to be repeated. But Martha sees in the coming of this now famous preacher only a party. In her kindly enthusiasm she is still intent on delicacies and decorations, on further attentions to the guests, till worn out with hurried tasks she complains of her sister to the chief guest Himself.

One fancies He looked sympathetically upon the weary and hurt face of His friend, as He remembered all the endless small tasks that belong to women. His voice was very gentle as He said, "Martha, Martha, thou art careful and troubled about many things, but one thing thou lackest." Instead of harsh and uncomprehending blame, it seems to me that here was given in the tenderest possible way the lesson that women need to-day as much as two thousand years ago, and that is the relative value of all things.

Delicate cookery is good, but if it interferes with knowledge of affairs plain dishes are better. Beautiful sewing is good, but if it keeps one from knowing the more beautiful world out of doors, plain clothes and plain linens are better. Christ never held up as an example the idler and the sentimentalist, but He was urging simpler living to one who had forgot that the life is more than meat and the body more than raiment.



The Dominant Race

By John E. Dolsen

DEEP in the bowels of a frozen world That died a thousand million years ago My spirit wandered, by some strange force hurled

Across the ether space. 'Twas miles below

The surface of the planet, in a dark And mighty cavern, digged there in the past,

By men, to find if yet a feeble spark Of heat or drop of moisture in the vast Dead lump remained. Here, hidden in the dull,

Dim chambers, burrowing deeper year by year,

Like to the maggots in a rotting skull, A race of men had lived. Their toil and fear

Had narrowed all their mighty range of thought,

Till it encompassed but themselves alone. Yet, strange, though 'gainst extinction they had fought,

Their little souls more arrogant had grown.

* * *

The last man of the race lay where he'd died

Ages before, a frozen, useless clod. Scratched by himself, upon a boulder's side,

I read this boasting sentence: "I am God."

victim's own people had hurried on to safety. But this member of the despised sect of Samaritans, this traveler with whom the wounded Jew himself would have disdained to have dealings, was made of different stuff. He did not remember that there was an instinctive and racial hatred between this stranger and himself. He had to help.

To be a good father or mother, a good son or daughter, a good friend, this is much. But to be a good neighbor is to have a strength of love, a breadth of nature that reaches beyond any personal circle.

You remember the legend of Abou ben Adhem, how he wakened one night to see an angel writing beside him. "What writest thou?" he asked. "The names of those who love the Lord." "And is mine one?" "No." But Abou pleaded, "Then write me as one who loves his fellow men."

The angel wrote and vanished. The next night It came again with a great awakening light, And showed the names whom love of God had blest. And, lo, Ben Adhem's name led all the rest.

Don't stop at making your mind up; keep it made up.

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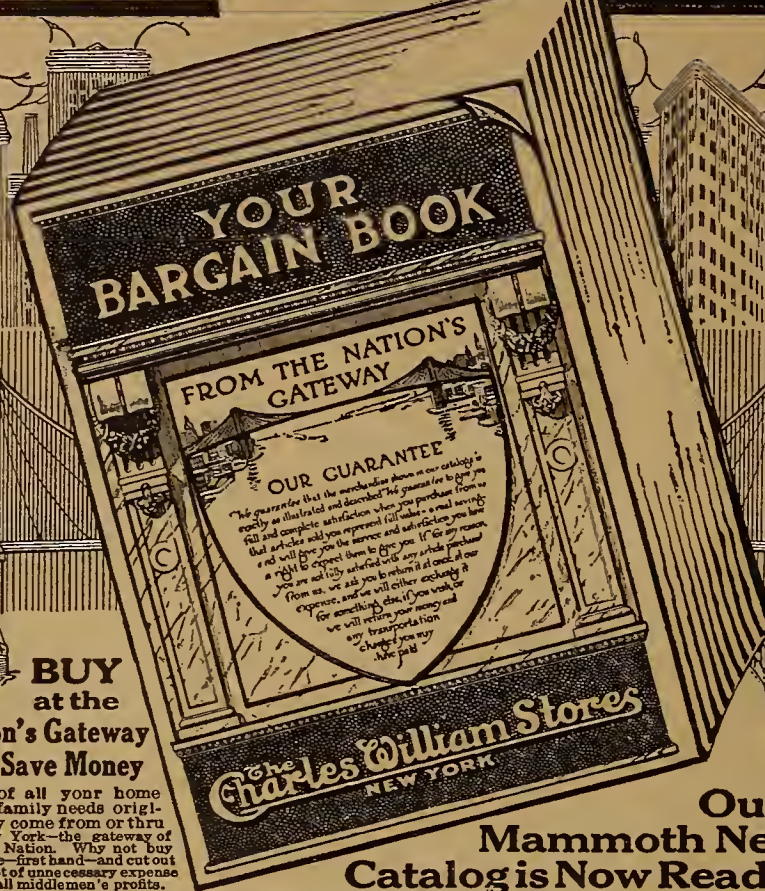
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City Positions for Country Girls

By Frances E. Boord

MY DEAR girls, you who are wishing you could exchange the every-day drudgery of the farm, with its attendant noises of cackling hens and grunting pigs, for the alluring positions of the city, let me tell you what these positions really are. Of course it will not prevent those of you who really intend going to the city from doing so, but I want you to know just what is before you.

As I am going with you this time, you will not need to pay so much attention to the following notes sent out by the Young Women's Christian Association, but you had better put them away for future reference:

ATTENTION! WARNING TO YOUNG WOMEN TRAVELING ALONE

Do not start out for a strange city or town without information about a safe place to stop.

Do not leave home without money for an emergency and sufficient for a return ticket.

Do not ask for or take information or directions except from officials.

Do not accept offers of work, either by person or by advertisement, without investigation.

The Young Women's Christian Associations of all cities and large towns have reliable employment bureaus and boarding-house directories, also cafeterias, lunch-rooms and social parlors, where all young women are welcome to come and rest.

What are Your Qualifications?

If you have acquaintances in the city you might possibly get board and laundry at \$4 per week, but such cases are rare, the usual price being \$5 per week and laundry extra.

Your boarding place being selected, we will take stock of your qualifications. As you are an average country girl, we will suppose that you have an average common school education, and no "pull" except possibly a letter from your pastor "to whom it may concern" stating that you have lived an exemplary life in your own little sphere. There is nothing in sight but the "Female Help Wanted" columns of the daily papers. Here is an advertisement that sounds inviting: "Wanted—Doctor's office assistant. Apply at two o'clock." We arrive ten minutes before two and count just twenty-five ahead of us. In a few minutes the doctor opens the door and tells us that he has engaged his assistant. How much per week was the position? Five dollars.

Looking over the want columns again, we see that they are composed mainly of notices like this: "Wanted—House girl. \$25 per month; no washing." This means that the girl gets her board, laundry and \$25 clear money per month (sometimes it is \$30) for doing just the housework and cooking; sometimes she has only one of these departments. "Oh," you say, "I didn't come to the city to be a servant." All right. We will interview the superintendent of one of the department stores.

As the cashiers seem to have a pleasant and agreeable task, we ask what their salaries are. The answer is: "Six dollars per week, and if any deficits are found in the cash box the cashier is held responsible." In the other departments, if by chance you are started at all, they will start you at a wage of from three and a half to seven or eight dollars per week. Ten dollars per week is a very rare thing in a department store. But suppose you get ten dollars, take five out for board, one for laundry and sixty cents for carfare, you are left with three dollars and forty cents for incidentals and clothing. One of the important requirements, too, is that you dress in good, well-fitting clothes. Even if you are a good seamstress you will have few hours free for mending, and fewer still to make your own dresses; a dressmaker will charge you from seven to ten dollars for making a dress.

The Girls Who Do It

"But," you say, "the counters are all supplied with well-dressed saleswomen. If the difficulties

are so great, by what means are they there?" Well, many of them are city girls and do not pay board, as they live at home and only do this for "pin-money," while still others were once pure, honest little country girls like you. Ask the aching hearts of their poor old gray-haired parents out there in the desolate country homes how their daughters live in the city and dress so elegantly on such a small salary.

Buts and Ifs

Enough of department stores? Well, here is an advertisement we have overlooked: "Wanted—Bright, capable office assistant; good penman." Our spirits rise as we hurry to apply. We are met by a neat little maid to whom we say that we have called in answer to their advertisement. She politely tells us that we are to pay one dollar down, and they will endeavor to get the position for us. An inquiry reveals the fact that they also keep the dollar if they don't get us the position.

More Warnings

While we are down-town we answer one more office advertisement. The would-be employer seems well pleased with your recommendations, penmanship, etc., but asks if you can take notes in shorthand and use the typewriter. You answer in the negative, and that ends the interview, and so will all such interviews end until you take a course in stenography or bookkeeping or both.

Be careful, if you are interested enough to begin the course, not to pay more than a month's tuition in advance, for if something transpires that keeps you from finishing the work the business college will not refund your money.

We notice that the railroad companies employ many girls as car accountants, but, unless you are a friend or near relation of an influential railroad man who can get you placed, it isn't worth while for you to apply.

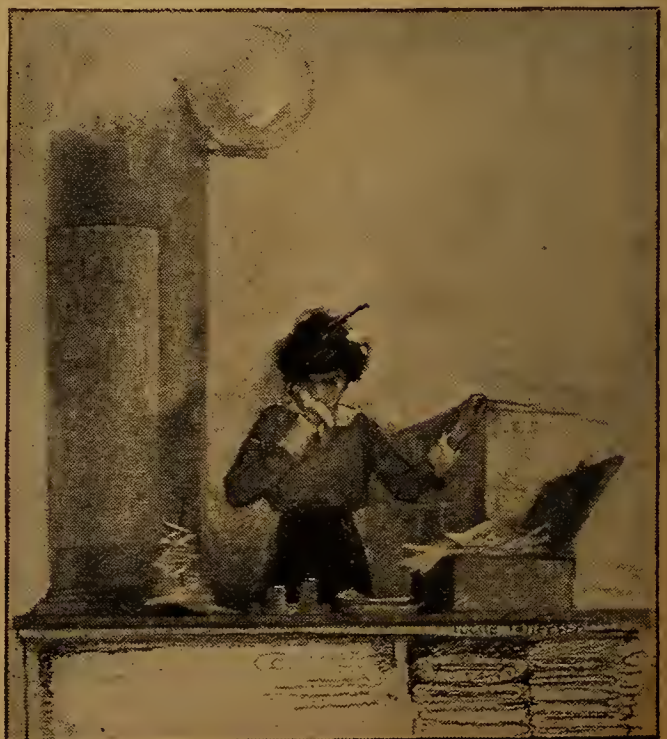
Learning New Tricks

The shoe, shirt and overall factories usually will give you work, but it depends on your adaptability whether you make expenses or not, as you are paid so much a dozen, a hundred, etc. If you cannot learn to sew in the way you are told, instead of in the way you have been used to sewing, you will not be able to turn out many dozens. A capable girl, after spending a month or so learning, may make from ten to fifteen dollars per week; but the work is grinding.

Remember, too, that all office, store or factory work demands many hours a day and sometimes proceeds far into the night. It takes health and strength, as we see by some of the want advertisements, "No invalids need apply."

Count the Cost

Think long and hard before you leave the home nest and the pin-money of your chickens and turkeys, and the acquaintances who respect you as Mr. Brown's daughter, for in the city you are only one of thousands of wriggling, struggling human atoms who are trying to be the first to come out on top. It is true that there is room at the top for you, if you are the right girl and have chosen the right place, but make sure of this fact.



You are only one of thousands of human atoms

Some Winter Fun For Children

And How to Find It

How to Make Hand Sleds

By J. C. Allshouse

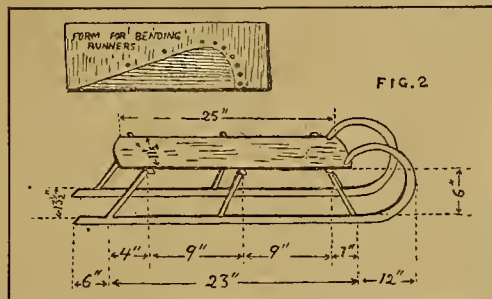
IF coasting or board-runner sled shown in upper part of Fig. 1 is easily manufactured. Runners and seat board are each $\frac{3}{4}$ -inch boards of the length and width indicated in diagram; $\frac{3}{4}$ -inch holes are bored three-fourths of an inch below upper edge of runners, and beams of inch square hardwood are fitted across. Beams are cut 12 inches long and shouldered to fit the auger holes so that they are 10 inches between the shoulders. Drive all three beams into one side, then put on the other runner, and fasten at each hole by a screw down through top edge of runner. The beams should be shouldered so that the upper side will have the level surface three-fourths inch below top edge of runner, and the seat board should be just wide enough to set closely in between the runners. Shape ends of board and runners as shown, and screw the seat firmly to the beams. Have a smoothly rounded hand hole in each runner, and bore a small hole in each rear front or point for drawing rope. The dimensions given make a popular size for boys but may be varied proportionately as desired.

A plain framed sled is not so difficult to make as would be supposed, and the lower part of Fig. 1 gives dimensions that will make the operation as simple and plain as possible. Dress out two sticks of tough oak, hickory, or ash, 28 inches long, 1 inch wide, and $\frac{3}{4}$ inch thick. Make a form of right shape to please the eye, and then proceed to soften them by letting lie in hot water for a short time. A common stove boiler may answer for the steam box and advantage may be taken of washing days. To make a form to bend upon, shape a piece of board just as you wish the concaved side of the runner, and nail this to another board, as shown in Fig. 2. Bore a line of auger holes on the same curve about two inches from the curved block; make hardwood pins to fit these holes closely and prepare a number of wedges of different thicknesses. After half an hour or so of boiling or steaming take the runner stick quickly from the water, place the end between the end pin of the bending form and the block, and bend it carefully but quickly around, putting in pins and wedges as fast as possible, until the stick is closely keyed up. Let it lie in the form until it is thoroughly dry, and it will not spring back.

After runners are bent, bore half-inch holes through them from top to bottom at positions indicated. Take six sticks, 8 inches long, $\frac{3}{4}$ inch square. Make round half-inch tenons on each end so that shoulders of stick are five and one-half inches apart. Drive one end of each into the holes in runners, and you are ready for the beams, which should be $1\frac{1}{4}$ inches wide, $\frac{3}{4}$ inch thick, and 14 inches long. Bore a half-inch hole in each beam one inch from end, and drive on the knees or posts of sled. Before putting together, bore a half-inch hole near front end of each runner and fit in a draw stick. Put wedges in ends of knees or posts after they are driven in, crosswise of length of beam and runner, to hold secure. Trim off the projections top and bottom, and on top of beams put on raves, 2 inches

tools if you have no others. Bend the shoe to conform to curve of runner, allowing the ends to turn up over runner a little; fasten with $\frac{3}{4}$ -inch screws, with the heads set down even with surface of shoe or a little below.

For the fauzy framed sled in Fig. 2, dress out two sticks $1\frac{3}{4}$ inch square and 5 feet long. Beginning about two feet from one end of each, gradually taper them down to five eighths of an inch square for the front. Steam and bend as previously described. The knees are about 8 inches long, $\frac{3}{4}$ inch thick, $1\frac{1}{4}$ inches wide, and one end tapered down, making them $\frac{3}{4}$ inch square at other end. The smaller end is framed into the runner and the board part into the beam, so as to give a bracing support. Lay the knee sticks on slanting, as shown in cut, and mark guide lines on the runner and stick for mortising and tenoning. Mortise and tenon the beams, runners, and knees so they will stand in the positions indicated. The beams should be $1\frac{3}{4}$ inch and 14 inches long. Set the



runners so the knees will incline toward the seat board, making thirteen and one-half inches apart at bottom and eleven and one-half inches at top. The beams project an inch and a quarter and should be finished tapering. Distance straight up from runner to beam, six inches. Bed board is screwed firmly to beams, which should be even on top, and front ends of runners may be secured by forcing through half-inch holes in the bed board. The small ends of runners should be about nine inches apart inside to inside, and a draw stick about ten and one-half inches between shoulders should be put in at the front of the runners a little above the level of the top of beams. Iron or wire braces may be added to a framed sled, and if used the manufacturer may exercise his own ingenuity in applying them. The neatness of woodwork and finish of the sled in general are also subject to the maker. When completed the sled may be painted a red or green color.



Little Playmates

By Pauline Frances Camp

I CALL them all, my playmates dear,
Each little rosy day;
We have the very nicest times,
As long as they can stay;
For they must go to other lauds,
With children there to play.

I wonder if they ever tell
Those other little chaps
The naughty things they see me do?
Or teach the little Japs
Rude ways and manners learned from me?

I do not know—perhaps!

Sometimes I disobey Mamma,
Or say an angry word;
And once I stole some speckled eggs
From little robin-bird.
I'd hate to think those other boys
Such things of me had heard.

And so I mean to do my best,
To show each little day
How very good a boy can be,
At work as well as play.
And then, you see, they will have only
Pleasant things to say!



Who Wants a Gold Medal?

IF YOU are a child anywhere from ten to fifteen years old, and are attending school, and are actually living on a farm, the United States Government would like to have you enter a gold-medal contest. All you have to do is to write an essay on earth roads, according to the rules laid down by the Office of Public Roads, United States Department of Agriculture, Washington, D. C., and if you win the contest you will get the gold medal. Open until March 2d. Write to the office named above for information. To have a gold medal given for merit by the Government of the United States is a thing worth striving for.

An Eskimo House

By A. E. Swoyer

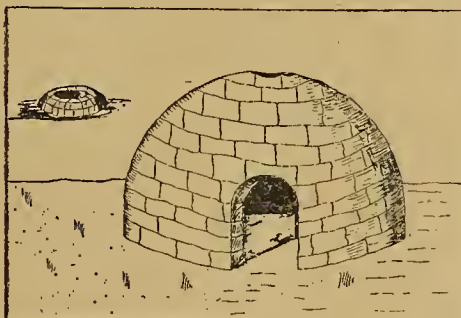
THE Eskimo hut illustrated is a close imitation of the rude shelters which serve as the homes of that odd race, and the method of building is exactly the same. Moreover, if properly put together it will last all winter; a fire may be built in it, and it will serve as a general outdoor playground. If erected near the coasting hill or the skating pond it will make a first-class shelter from the biting wind and a good place to warm numb hands and to thaw out frozen skates.

The first step in building such a hut is to lay out the "floor plan" on the snow. This is best done by fastening a sharp stick to each end of a rope that is one half the width of the desired house. Drive one peg into the snow, and, keeping the rope tight, mark out a circle with the other.

Next lay blocks of snow, each about six inches thick and a foot long, along this line. Such blocks are easily made with a mold consisting of an empty starch box with the bottom knocked out. If this box is placed on a flat board, filled with snow and packed tightly, perfect bricks may be turned out. Lay one tier clear around your hut, and then, with a piece of board, scrape off the corners both inside and out until the walls are in a curve instead of a series of straight lines; then, if the weather is freezing, wet down the top of this tier and lay another row, setting this in a trifle from the outside edge of the first. This will make a tight joint and give the proper slope to the structure. The small cut illustrates the house when two or three tiers have been placed.

In this laying, if four boys work together a great deal of time may be saved. Two should mold the blocks and carry them to the building. One should work on the outside, and the other on the inside—the last works from the interior until he is completely walled in. By handling matters in this way it is easier to get the walls in the proper shape, as well as to keep them "dressed down" smooth and even. A little extra care is needed in placing the topmost layers, as they close in to form the roof; but if each row is carefully formed and allowed to freeze solid to the preceding one before going on with the next, little or no difficulty will be experienced.

After the house is completed, cut the door through with a snow shovel; then throw water over the outside until the hut is frozen to a smooth, hard surface.



If you intend to build a fire in your hut you must cut a hole through the roof for the escape of the smoke. This will not carry all of it away, but is the only chimney used by the Eskimos. Then, if you throw straw, hemlock boughs, or blankets upon the floor your hut will have been made comfortable.

Now that you are through with the building, you may be interested in knowing that you have done something unusual from an engineering standpoint—that is, you have erected a structure of true arch form without either keystone or interior support! This is perfectly feasible with snow blocks, but so far no contractor or architect has been able to accomplish the feat with more durable materials.



Clover Blossom—"Anty Drudge, do you like my dress? I made it. I'm going to wear it to the Grange Dance tonight. I never had a fancy dress before, but Ma and I wash with Fels-Naptha Soap now and I knew the light blue wouldn't fade, and the lace wouldn't have to be rubbed to pieces."

Anty Drudge—"You look sweet! I'm glad I told you about Fels-Naptha Soap. It won't hurt anything."

Fels-Naptha Soap won't harm the daintiest fabric, nor fade the most delicate color. But it will do the hardest, coarsest kind of work as well and as easily as it will do the finest.

All you need is cool or lukewarm water. Fels-Naptha Soap will do the rest. Clothes soaped with Fels-Naptha and put to soak are practically clean when you come to wash them. They don't need hard rubbing or boiling.

It dissolves grease on pots and pans, takes out all kinds of stains, makes dirt disappear.

Directions for doing all kinds of work with Fels-Naptha Soap are on the Red and Green Wrapper.

Fels & Co., Philadelphia



Mr. Farmer in Account with Mrs. Farmer

By W. Milton Kelly

AFTER carefully studying the various sources of income on many farms throughout the country, one feels like saying a few words in behalf of man's noble helpmate—woman. In going around among farmers he finds many opportunities to compare the good and bad in farm routines. Very often after going over the farm, inspecting the live stock and examining the accounts for the year, he is greatly surprised to find that an apparent loss of several hundred dollars has in some mysterious way been turned into a profit. In the beginning we credited these discrepancies to good management on the part of the owner, but after several years' experience gathering, analyzing, co-ordinating and interpreting facts about farm incomes we find that in nine cases out of ten there is a woman in the case, and that it is due to her clever management that the apparent loss has been turned into a visible profit.

Helpmates on the Farm

In the pleasures of farm planning, or of taking a private course in farm book-keeping, the owner is likely to forget, if he ever knew, the great importance of the woman on the farm. Few farmers can understand how they can lose a few hundred dollars a year on their farming operations and still come out even at the end of the year, unless they have had a wife, the right kind; and even the very practical farmer is prone to forget that his business cannot go on successfully without a good wife; we call them helpmates nowadays.

During the past five years I have visited many farms in the capacity of adviser, and also while gathering material for the agricultural press. These studies and investigations have proved very useful in determining which branches of the farming were paying a profit and which were not, and it is my judgment that they should prove equally interesting and useful to those who have never given any attention to this phase of determining the sources of farm incomes.

A farmer of Chautauqua County, New York, owned ninety acres of land on which he kept a dairy of fourteen cows, about twenty hogs and four work-horses.

An examination of his farm and accounts showed that he had lost more than \$200 a year on his farming operations, and yet he had paid \$90 interest, taxes, painted his house and lived comfortably during the year. After making a more thorough investigation it was discovered that Mrs. Farmer had a flock of about one hundred and fifty hens, and that for several weeks during the summer she had kept six city boarders. In other words, Mr. Farmer, with an investment of something like \$4,500, had lost more than \$200 during the year, while Mrs. Farmer, with an investment of less than \$500, had furnished the family with groceries and the money to make good Mr. Farmer's losses at the end of the year. You may say this is an exceptional instance, but it is not, and I will venture to state that similar conditions prevail on more than twenty per cent. of the farms throughout the country to-day.

Skim Milk in Its Right Place

In another instance a dairy farmer in Oswego County, New York, specializing in the production of farm butter and pig pork, found that he was losing nearly two hundred dollars a year, but his wife, a sensible business woman, suggested that by making cottage cheese instead of feeding the skim milk to the pigs she could help put the business on a paying basis. The result was that her cottage cheese and eggs and dressed poultry more than made up the losses at the end of the year. Thus the clever and judicious

management of Mrs. Farmer, more than the management of Mr. Farmer, put the farm on a money-making basis.

One Farmer's Daughter

A few years ago, while visiting my old home, I met a young woman who was making a success of the poultry business. She was an unusually intelligent woman, but her father was constantly harping about the amount of feed he was furnishing and about the premises being overrun with the pesky hens. I made the suggestion that the daughter pay him a moderate amount for the use of the houses and yards and for the feed required to maintain the fowls. In this way they could keep a record of each branch of the business and be independent of the other. The first year the daughter made a profit of more than \$300 after paying every expense and building five new colony houses. The father's profits from the farm were less than \$200. The daughter's investment amounted to less than \$500, while the father's investment amounted to more than \$6,000. The second year's results showed a profit of more than \$450 for the daughter, and less than \$100 for the father. Last year's cost sheets made by the writer showed that the daughter cleared about \$400, while the father lost about \$200 from

depreciation, horse maintenance, and credited them with a reasonable sum for family uses. In this instance the daughter kept house for the father, consequently she should not be charged for her board, neither did I give her any credit for her work in the house and garden.

Another Woman

In the Chautauqua Grape Belt a young woman with six acres of land and a capital of \$200 started into growing strawberries and bush fruits. Her husband, a well-to-do grape-grower, humored her in her whims, with the result that in less than six years the wife, with less than one sixth of the capital invested and after paying every expense and hiring a large part of the work done by a neighbor's boy and hired help at harvest-time, is clearing far more money from her six acres of small fruits than her husband does from the rest of the farm. He spends all of his time on the farm and employs a hired man eight months of the year and additional help at harvest-time.

Praise to Whom Praise is Due

Such results are nothing wonderful, you may say, and perhaps you can tell a better story of some woman's success on a farm; however, the examples go to show that more than one farmer owes his success to the ability of his wife or daughter to make the money to balance up his shortage at the end of the year's business.

A great many farmers have reached a high degree of success because the very nature of their business has made it possible. They have specialized on a big scale. The circumstances were such that they could afford to hire help trained along special lines. On such farms where there is a competent man to look after each department the woman plays a less important part. However, on the average American farm we find that success depends, in a large measure, upon the woman.

These facts being as they are, why should not the farmer's daughter regard farming as a profession as full of dignity and opportunity as any city career?



One of Mrs. Farmer's paying investments

his end of the business. In making up these cost sheets I charged the poultry end of the business with a fair proportion of the taxes, interest on the investment,

By-Products of the Kitchen

By Mary Hamilton Talbott

EVERY large manufacturing concern has scientists at work to discover ways to utilize the waste of the plant and convert it into money. Just so should the careful housewife study the by-product problem of the kitchen in order to save ten cents here and twenty-five cents there, which, as we all know, soon mount up into dollars on the credit side of the ledger.

The price of beef need not concern the woman who has learned that every drop of blood and every particle of juice is

bits from the chops can be utilized in the soup pot; or the bone can be cooked with the juice and the meat cut into cubes and served with brown sauce and dumplings. It contains enough muscle food for several persons. Never throw away a raw or cooked bone until it has passed through the stock pot, even then see if the bone contains marrow; if so, shake it out and use on small squares of toast. It is very tasty and dainty.

We complain about the high cost of chicken and turkey and yet throw away a portion of them which contains much nutriment. A poultry dealer told me that his drivers made considerable money by collecting from various houses the portions of fowls usually put in the waste bucket. The feet of both these fowls are very rich in gelatin and add materially to the stock pot.

"A Penny Saved is a Penny Earned"

In the hock end of a ham there is always a portion near the bone that seems hard to utilize, as it cannot be easily sliced. Chop and mix it with scrambled eggs or pass it through the grinder, season, mix with a little melted butter, and pack it in a jelly glass, make air-tight with paraffin and you have a sandwich material ready for an emergency or for the daily lunch basket.

All housewives have a grease pot, but they should make it plural instead of singular and have pots. The greases from various kinds of meats are the most valuable by-product of the kitchen, if isolated from each other. Dumped carelessly into a common pot they are fit only for the old-time soap pot. Divided they will not only enhance the flavor of the kitchen products, but will contribute largely to the saving of money. A French cook told me, "One spoonful of grease which has been kept in a pot by itself, and thereby retained wholly its own flavor, will do the work of ten spoonfuls of butter." And ten spoonfuls of butter make almost a pound, costing anywhere from thirty-five to sixty-five cents a pound—the spoonful of grease costs practically nothing. Beef drippings make excellent pie crust if they are beaten to a light cream and a squeeze of lemon juice and half a teaspoonful of baking powder is added. For ginger bread and

cookies these drippings are even better than lard, and drop cakes made of them for the children are wholesome and tender. Poultry fat is just the thing for spice cakes and cookies, and oysters fried in a pan of hot chicken grease, in which a couple of bacon slices have been fried, are most delicious. [TO BE CONTINUED]

Dainty Present for a Man

THE average man looks somewhat sneeringly upon the sachet packet, but try giving him one warranted to protect his best suit from ravages by moths and see the difference it makes.

First add twenty drops of oil of cedar to one ounce of prepared chalk and mix until thoroughly absorbed. Fill as many sachets as you wish with this preparation, making the covers of small Japanese napkins of any fanciful design. The powder is held in by placing it between thin layers of white cotton.

Tie the completed sachet with a small ribbon and you have a most inexpensive gift, yet one that is really a delight to the average masculine. L. M. THORNTON.

New Stories for Sunday Page

ONLY a few years ago the need of the country church for special help was thrust emphatically upon the public. The country church had never been ignored, but despite all the help it received it declined. This decline reflected the transition stage in rural life, and the awakening to the new opportunity of the church was a part of the widespread Country Life Movement.

Out of the cry of the church itself for help to meet new conditions was created the Department of Church and Country Life by the Presbyterian Board of Home Missions. Its aim is to make the country church a leader in rebuilding country life.

The work of the Department is national and varied. Certain outstanding features are the making of social surveys in rural sections; holding of Country Life Institutes; co-operating with summer schools in giving special courses of training to country ministers. Its service has been requested and used by nearly every denomination and many country life organizations not labeled religious.

Miss Taft, author of a series of articles which will appear on our Sunday page, is in active charge of the work, together with Dr. Warren H. Wilson.

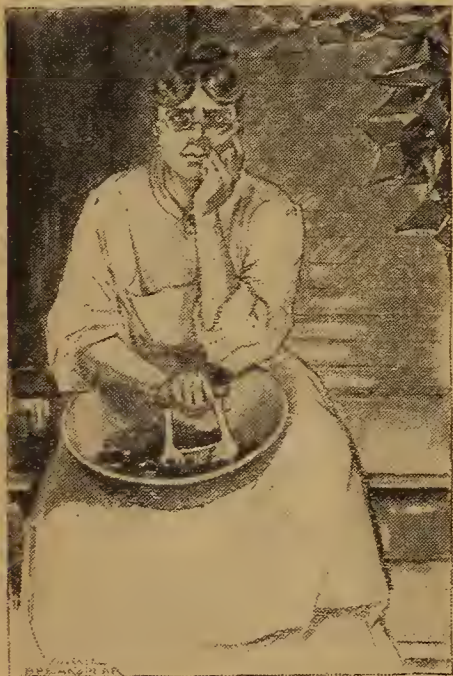
The Country Church

By Florence Kellogg

"**W**HY art thou white among thy thronging trees, White from afar upon the long hill's crest?"



"The country children gather at my knees, I call the farmers to their Sabbath rest; The neighbors all are neighbors most through me; An upward path leads here, a path well-trod; Fair for their sake, and constant, must I be, The white church on the hill, watchman for God." —From the "Survey."



Chop the hock end near the bone

precious; that the bones and skin of animals and fowls have their distinctive flavors and uses. There is always a bit of juice left on a platter of beefsteak, pork or lamb chops, or a roast of any kind. Many a person cuts off a small portion of a chop or the tough end of a steak and leaves these and the bones upon the plate and throws them all away after the meal. The tough end, with the addition of a few inexpensive vegetables, can be made into a very nice dish for luncheon or supper. The bone, juice, and

The Child at Home

A Department Conducted by Helen Johnson Keyes

All Inquiries Will Receive Interested Attention

The Entrance

IT WAS at eight o'clock of a January morning that I set out for Ann's house to superintend her first hours alone with her first baby. A windless snow had been falling for three days, and the great soft expanse of farm country was a fairy kingdom, with all its trees feathered into drooping plumes and its shrubs rounded into chubby puff balls. I was glad that I had an eighth of a mile to walk to the first house, and almost as far again to Ann's. The dry snow flew about my feet in a riot of merriment, and the sun made it sparkle like golden sand. Fearing lest I should be lonely, a pair of blue jays followed me for some distance with their scolding cry, and once I caught the gleam of the cardinal bird, brilliant and mystical upon the white bosom of the land. These birds have a strange affection for our Ohio farms, and instead of deserting them when the cold settles they grow tame and seek the food which many a child or woman places in the yards.

I Borrowed Rosaltha

My first neighbor was Margaret Weston. Something always caught me in the throat when I thought of Margaret. We had gone to school together, but after the first year in high school she had married, a child still. The marriage was unfortunate, and she had settled bitterly into a joyless routine of hard, unlovely labor. Her five children had come in seven years, and I really don't believe she ever had a moment in which to stop working and enjoy them. What is so piteous as a woman robbed of the power to enjoy the most ecstatic of life's gifts, the birthright of her womanhood?

This morning, as I came near, I saw her upon the porch, gesticulating crossly to her oldest child, a girl of eight. An angry cry broke from the rebel, who threw herself upon her face in the snow, beating it with thin, angry legs and peering about her as if she were afraid of an enemy or a wild animal. When Margaret saw me she flushed slightly, and then explained:

"Rosaltha won't go to school; she's the stupidest child there, anyway—still in the first grade. A nice thing it is to have a dunce for a daughter!"

I was very angry with Margaret till I looked in that thin, dry face which had once been so lovely that the boys wouldn't leave it in peace to grow up normally. Then I went up the steps, and put my arm around her as if we were girls trudging to school again, and I said:

"Margaret, if I wanted to borrow some dishes, would you lend them?"

"Why, of course," she answered, "there's that set with the roses and butterflies—"

"And if I needed a meat chopper and a broom—"

She looked at me in amazement. "Lands, Nella, what's happened? Take anything I've got."

"Anything? Do you mean it? You see, I want Rosaltha for six months, to be every bit mine, and to do with as I do with my own kiddies. May I have her?"

"Ain't three enough for you?" she asked, half bitter and half wondering.

"No," I answered, "I wanted a round half dozen. Come, may I have Rosaltha for six months?"

The little girl had risen, and was standing open-mouthed, staring at us with crossed eyes. A stupid pupil! Why not? With adenoids choking her, and eyes which could not focus, and a tiny body full of thin blood incapable of feeding her brain!

"You always was queer," Margaret suggested. "Why, take her along. Guess you'll be back this way with her before many days! I'll send over what clothes she's got by Tom before night. She's got a ribbon on her hair, and a good warm dress, too, her grandma gave her. Oh, my, see her stockings all down, and her kicking about on the ground, too!"

I held out my hand to the child and gartered the tumbling stockings. *Rosaltha!* The absurd name was the last cry of Margaret's once romantic nature. And the little shriveled, unroselike blossom of humanity laid her purple hand in mine and we walked on toward Ann's.

The Bath

It was all Rosaltha could do to breathe, so I took the conversation upon myself and told her about that wonderful baby of Ann's and how happy women are when children come to them. I don't think she understood much, but my steady voice soothed her, and I felt that she was as nearly happy during that walk as she had been for a long time.

When we reached Ann's I suggested

that some milk and a few things out of her pantry would taste good to me and possibly to Rosaltha. Ann is one of the blessed people who don't have to have everything explained. She draws truth out of the atmosphere. So there were no whispers and innuendos to disturb the crumpled soul of Rosaltha, but just a big pitcher of milk and lots of gingerbread and apple sauce to fill up her stomach. Once she seemed to wake up when she followed us into the pantry and, standing on tiptoe, cried, pointing, "See the pie with the face on it!"

Being the eldest of five, she was rather indifferent about James, junior, when we took her up-stairs to see him, and so Ann gave her an illustrated paper and a pair of scissors, while we set to work.

First we went to the kitchen again and boiled a cupful of water and dissolved a teaspoonful of boracic acid in it. This we took up-stairs and set on a table, with a couple of burned matches, a roll of cotton waste, a saucer with some flour in it, two small blankets, some large and small safety pins, soap, and a wash cloth. Then we laid out the clothes. They were all to be clean in honor of the special occasion.

At the bottom of the pile we put the dress, on top of it a flannel petticoat made without a waist and buttoned on the shoulders, then a warm shirt and a torn strip of soft flannel the width of Junior from his armpits to below his waistline. Then I set the tin tub on a chair and went down to the kitchen again to draw water.

"Don't make the mistake of parboiling your baby," I said as I poured first out of the hot pitcher and then the cold. Let the water feel just thoroughly warm on your hand. Now I have it right, lift him out of his basket, and be sure that you are supporting him under the back of his head. It is best to do this in the bend of your left elbow, while your right arm in the same position holds his body. It's a kind of cradle."

Ann scooped him up with an expression as agonized as if he had been a red-hot ramrod, and limped over to the bathtub as if she were walking on ice. She was so exhausted by this first effort that I took off his clothes myself.

"Now put him in the tub," I commanded. "Hold the hollow of your left palm under his head so as to keep it comfortably off the bottom of the tub, and bathe him with the right hand."

Junior's placid satisfaction brought assurance to his mother, who scoured him as if he had been a sooty kettle.

The Dressing

"There, that's enough," I said at last. "Lift him out and wrap him in this blanket in your lap, and pat him dry with this



Peering about her as if she were afraid of a wild animal

towel. There, that's very good. Throw out the damp blanket and put the dry one under him. Sprinkle all his creases with flour, and then we'll put on his first and rather difficult garment."

I held out the strip of flannel. "Slip it under his back," I said, "then bring one end a little to the left of the navel, and with three small safety pins fasten the middle of the band to it. It should be quite tight. This leaves a free end. Turn the baby over on his face—you can't do it? Turn him away from you, and as he goes slip your hand from the back of his head around under his chin so the head does not flop when the face turns. Well, you might have done it

worse! Fasten the loose end now, with three more little safety pins, to the place on the band which it reaches snugly. If your pins give out you can sew it, keeping your fingers between it and his flesh. This band reduces the danger of rupture, and should be worn for at least eight weeks. Where are your scales?"

"They belong to the nurse," answered Ann, "and she took them away."

"I'm sorry for that. A baby's weight is an accurate index of his progress, and it is important to know exactly what gains he is making. Your friends will cry, 'How big he is!' every time they see him, and his father will say, 'He's heavier to lift than he was yesterday, even!' when perhaps he has really lost weight. He should gain at least six ounces a week; I expected twelve or fourteen of my babies."

"I have some meat scales, with a hook on them, that weigh up to twenty pounds," said Ann, "but how could we fasten him on? If only he had hair we might hang him up by that!"

"Get them," I said, "and I'll show you how."

Difficulties Overcome

I folded Junior in a blanket, pinning it at the top like a closed hammock. This left an extension at each end, which I brought up and knotted. When Ann gave me the scales I thrust the hook through the ends above the top of the knot.

"You can work the holes with strong thread," I said, "to prevent their tearing down. Now let's hold his lordship up over the bed."

He kicked and bounced, almost hopelessly, but at last we found that he had gained two ounces since yesterday, which assured a happy day to his mother.

"I am delighted to see you are not burdening him with a cotton petticoat," I said after we had slipped him out of his hammock, "and that you have made his skirts only just long enough to protect his feet."

Before we got him into his dress Junior began to cry his hunger cry, which Ann had learned already and which brought a proud look to her face.

"Just a minute more," I said, "and he shall have his breakfast. We are just on time, eleven o'clock. But first take this match and wet its tip, pull off a piece of the cotton waste and twist it on, squeezing it tightly at the attached end, but leaving a wad extending beyond the stick. See how I do it. Now dip it in the boracic acid and wash out his mouth very gently. See, he likes it! Now make a new wad and go softly over the creases in the ears and in the visible part of the channel. Now another wad, and we'll clean the nostrils. He consid-

taking her now screaming infant and placing him upon her bed. "And isn't he simply wonderful to go through all that so quietly? Do you really have to go home?"

"Yes," I answered, smiling at Rosaltha, who sat in an apathetic heap, sucking one loop of the scissors handle. "And I feel as if I stood at the entrance of one of the most interesting experiences of my life."

"Then you're welcome to it," laughed Ann, not unkindly, looking into the stupid little face.

But I saw in the future another face, set on the same little shoulders grown broader. You shall hear soon how those shoulders and that new face grew.

Lessons from Poets' Verse

By G. Henry

POETS' work is to sing. This is indicative of a fine philosophy which refuses to be cast down by trials and tribulations. We have now and then a poet who sings a doleful song—but he sings.

Once upon a time a poet wrote some verses which told of a slimy pool, but he brightened the pool into a thing of truest purity by telling of the beautiful white lily growing in the slime! This is the true mission of poetry: to beautify, to brighten, to idealize, always within the realm of reason.

Life is real! Life is earnest!
And the grave is not its goal:
"Dust thou art, to dust returnest"
Was not spoken of the soul.

This from Longfellow's "A Psalm of Life." What could be more encouraging? But poetry doesn't need to be solemn, or to deal in subjects so heavy as life or the soul or the hereafter.

Here is a story for children, a fanciful tale about the fairies of America, and one of the characters is a kitten who became a robber bold.

I'm the kitten that once to its mother said,
"I'll never more be good;
I'll go and be a robber fierce
And live in a dreary wood."

And I gripped my pistol in my hand,
And a mask tied on my face,
And out I went, in a stormy night,
To a black and gloomy place!

Then the kitten met fierce denizens of the forest and (it is presumed) he wished he were back at home. But Quick has entertained our children, and that is always a worthy deed.

Oliver Wendell Holmes says he did not write the following; that it was written through him.

Build thee more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast.
Till thou at length art free,
Leaving thine outgrown shell by life's
unresting sea!

For those individuals whom each succeeding morning finds suffering from a grouch:

Hail to thee, blithe spirit!—
Bird thou never wert—
That from heaven, or near it,
Pourest thy full heart
In profuse strains of unpremeditated art.

Shelley's Skylark will surely help remove the cobwebs.
Or when Browning talks to us:

The year's at the spring,
And day's at the morn;
Morning's at seven;
The hillside's dew-pearled:
The lark's on the wing;
The snail's on the thorn;
God's in his heaven—
All's right with the world!

Don't you wish you had the faculty of putting your optimistic flights into words so blithesome? If you have no optimistic moments you are to be pitied.

So please let us no longer laugh at poets. 'Tis quite useless, for poets are so big-hearted and so large-minded that they do not hear us.

We owe them a deal. And we may all appreciate them if we will. Let us never again say, "Oh, I don't read poetry; poetry is not for men." It is for men, it is for the whole human family, written by its inspired sons, whether it be Homeric or jingling; and every man, every woman, every child, is benefited by a stroll with a poet.

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To-day's Magazine has been termed the one necessary woman's paper. This title seems quite appropriate because To-day's contains a valuable amount of important information which is both instructive and entertaining. The stories are wholesome and interesting. The fashions and hints on dress are up-to-date and sensible. The whole magazine is beautifully illustrated. Order as Club No. 6.

Any One
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For Only
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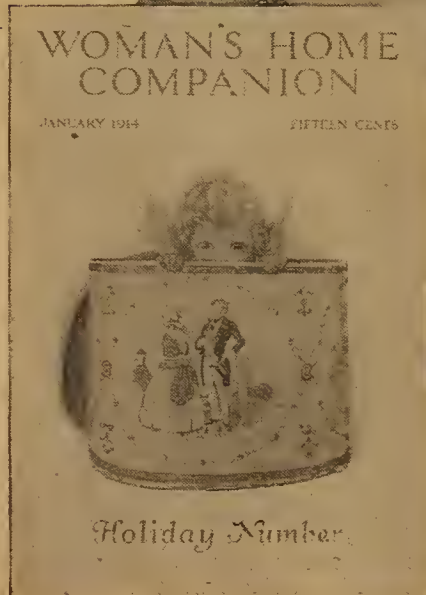
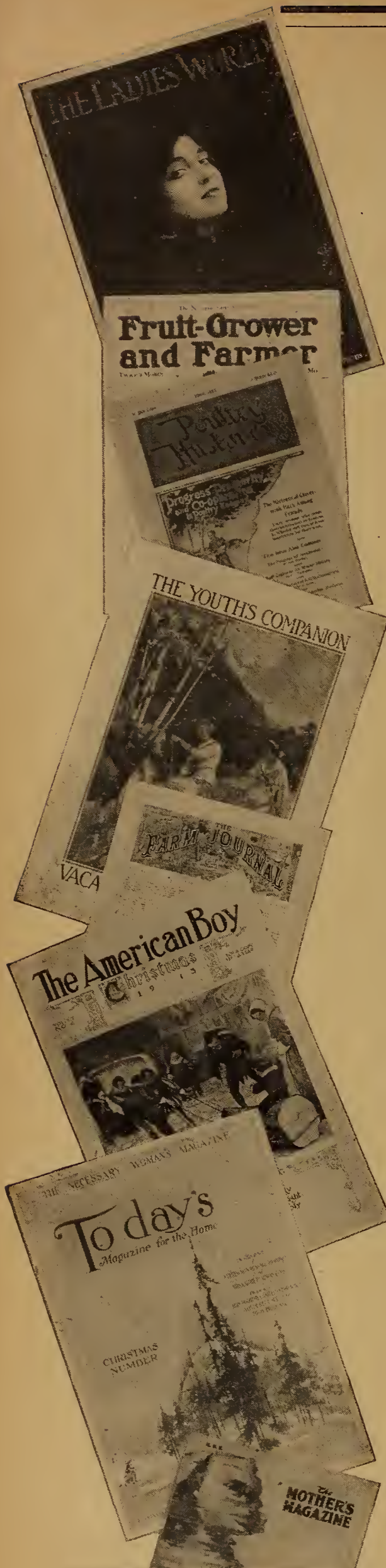
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Some Good Winter Desserts

By Jessie V. K. Burchard

IN THE really cold weather there is no doubt that cold puddings are not as popular as they might be were the mercury a little higher, and even a pie sometimes goes begging unless it is a hot one. There are a great many hot desserts, easy to make and very appetizing, and as digestible as the lighter ones of summer. The housekeeper may serve hot desserts for a month and hardly need to repeat one. Among the best, and most liked if well made, is the old stand-by, cottage pudding. This is so quickly made and baked that it might class as an emergency dessert, requiring hardly half an hour for the whole process, if the cook is expeditious in her movements.

COTTAGE PUDDING—Cream half a cupful of butter with one cupful of sugar, add one whole egg and the yolk of a second beaten together, one cupful of milk, two cupfuls of flour and two teaspoonfuls of baking powder. It may be baked in a sheet or in muffin pans. There are innumerable ways to vary this pudding in the serving. The sauce may be plain liquid sauce, made by creaming a tablespoonful each of butter and flour with half a cupful of sugar and adding half a pint of boiling water or a little more, according to the thickness desired, and flavoring with vanilla, lemon, orange or almond. A delicious orange sauce is made by beating the yolk of one egg till it is very light and thick, adding slowly half a cupful of powdered sugar and a teaspoonful of orange flavoring. For hard sauce use unsalted butter, or else butter that has been washed well. To one cupful of butter, creamed, add two cupfuls of powdered sugar; cream well together, flavor as liked, and chill it well before serving. The individual cottage puddings may be split in half and put together with a spoonful of jam, then served with sauce as usual. If almond flavoring is used in the sauce a few blanched and split almonds might be stuck into the top of the cake.

HOT TAPIOCA PUDDING—Put two cupfuls of water and one cupful of jam into a double boiler, with the juice of half a lemon; when it is hot stir in half a cupful of the fine tapioca, and let cook till the tapioca is soft and transparent. Add half a teaspoonful of salt, and serve hot, with cream and sugar.

CHERRY PUDDING—One large cupful of stale cake crumbs, one beaten egg, three tablespoonfuls of sugar, one tablespoonful of melted butter, half a cupful of milk, one teaspoonful of baking powder and flour to make a stiff cake batter. Butter a baking dish, and put into it a three-inch layer of sour canned cherries, drained very dry. Sprinkle with a scant cupful of brown sugar, pour the batter over, and bake half an hour in a moderate oven. Serve with hard sauce, flavored with almond.

A SUPERIOR BROWN BETTY—Melt half a cupful of butter, put into it a cupful of bread crumbs, and stir till all the butter is taken up and the crumbs are coated. Now butter a pudding dish, and into it slice a good thick layer of tart apples. Sprinkle with sugar and cinnamon, spread on a thin layer of the buttered crumbs, and dot with jelly of any preferred kind. Continue with apples, sugar, spice, crumbs and jelly till the dish is full, letting the last layer be a rather thick one of crumbs. Pour in a scant half cupful of water, and bake in a slow oven for an hour, covering if it browns too quickly. Serve with cream.

HOT CHOCOLATE PUDDING—Cream two tablespoonfuls of butter with half a cupful of sugar, add one beaten egg, half a cupful of milk, one cupful of flour, one teaspoonful of baking powder and a little salt. Melt a square of chocolate, and add it to the batter, with a tablespoonful of cocoa. Steam in a buttered mold for two hours, and serve with a liquid sauce.

JAM PUFFS—One cupful of flour, five teaspoonfuls of baking powder, one teaspoonful of salt, two tablespoonfuls of butter, half a cupful of milk. Rub the butter, salt, flour and baking powder together, and make into a batter with the milk. Butter custard cups, put a tablespoonful of jam in the bottom of each, and fill two thirds full with the batter. Steam three quarters of an hour, and serve with any good sauce.

BREAD PUDDING—This is a very good pudding I learned to make in England, which might almost be called a land of puddings, so many different ones do the English cooks produce. Any scraps of stale bread may be used, and they must be soaked in water and squeezed very

dry. Then, to a quart of bread add half a cupful of melted butter, a cupful of raisins, salt, a good deal of spice, two eggs and milk to make it fairly soft. Put this into a buttered mold, and steam it for at least two hours, and more will not hurt it. Serve with a good sauce, and you will not know it for bread pudding.

APPLE PUDDING—Pare and slice six large apples, and boil in as little water as possible till they are tender. Drain, and mash well, then add one cupful of bread crumbs, sugar to taste, according to the tartness of the apples, three eggs, the grated rind of a lemon and a tablespoonful of butter, melted. Bake in a moderate oven, and serve with hard sauce.

ROLY-POLY PUDDING may be made of canned cherries, strawberries or raspberries, drained very dry and spread on a good biscuit dough rolled quite thin. If the fruit is sour it should be sprinkled well with sugar and the dough rolled up carefully. Bake in a moderate oven till brown, and serve with cream or liquid sauce.

ANOTHER CHOCOLATE PUDDING—Beat the yolks of three eggs very light, add one cupful of sugar, and beat again. Add three tablespoonfuls of milk, one square of chocolate, melted, one cupful of flour, and beat till smooth; then add the beaten whites of the eggs and two teaspoonfuls of baking powder. Fill buttered cups half full of the batter, steam for half an hour, and serve with sauce.

WINTER SHORTCAKE is capable of many varieties. The dough should be a pretty short biscuit dough or a plain pie crust rolled to fit a pie tin and baked carefully.

Tear open, butter the layers, and fill with peach jam, strawberry jam, rich apple sauce, sliced bananas or raspberry jam. Serve with cream.

GINGER PUDDING—This is fine for a very cold day. Chop one cupful of suet very fine, add two cupfuls of bread crumbs, two teaspoonfuls of powdered ginger and warm molasses enough to make a moist dough. Steam for five or six hours. One or two beaten eggs may be added, but it is excellent without. This is a good pudding for the fireless cooker.

BAKED INDIAN PUDDING—Scald two cupfuls of milk in a double boiler. Mix four even tablespoonfuls of cornmeal with one cupful of cold water, and stir it into the milk. When it thickens add half a cupful of sugar, half a cupful of molasses, half a teaspoonful of salt, one teaspoonful of cinnamon, half a teaspoonful of ginger and two beaten eggs. Pour the mixture into a buttered baking dish, and let bake half an hour, then pour over it half a cupful of cold milk, but do not stir. Bake two hours more, and serve with cream. The oven must be very slow.

VEGETABLES TO BE TENDER should be cooked slowly. To hurry the cooking process of anything cooked in a double boiler, add salt to the water in the outer boiler.

CABINET PUDDING—One quart of stale bread or sponge-cake crumbs, one quart of milk, four eggs beaten with one cupful of sugar, two tablespoonfuls of butter, a little salt and a large cup of seedless or seeded raisins. Mix all well together, put into a buttered mold, and boil for three hours. Serve with lemon sauce.

The Experience Bazaar

Editorial Note—Here is an open market for the exchange of experiences. Will you not bring your problems and leave them behind? Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

DEAR FIRESIDE EDITOR: I was exceedingly interested in the article, "What is It to Support a Family?" The subject was ably and convincingly handled. Thank God, there are some men who consider their wives their equals. But what think you of the man who, marrying a woman with some means given her by her parents, after using this money to further their mutual interests, which is right, comes in a few years to call it his own, so that the wife has to ask for every penny she gets and has it given her in such a grudging manner that she dreads to ask? I say, shame on such a man. He is not worthy of a good, pure wife, who toils for her family day after day, and is sometimes so disheartened that if it were not for the children she would pack her meager wardrobe and leave for parts unknown. The "Golden Rule," if followed, makes for us a square deal.

The above is true to experience and facts. Let there be further discussion.
N. L. A., Ohio.

DEAR FIRESIDE EDITOR: I read Mrs. B.'s inquiry, "What is It to Support a Family," and I am presumptuous enough to give my experience along this line.

I married a Tennessee girl about thirty years ago, and began the practice of law, investing my savings in two stores managed by clerks. During that time my wife was accustomed to go to the stores and get what she wanted, money included. She was my inferior in education, but my superior in household economics. After many years I went into the ministry of the M. E. Church, and was assigned work in West Virginia. Up to that time my wife had no opportunity to exhibit any particular abilities for economy, as I kept no record of what she got from my stores; but after two years in the ministry how to make ends meet became a problem. I have found the most satisfactory solution to lie in having a common purse to which either has access. When I want clothes, books, and so forth, I order them and generally pay for them by check. When my wife wants anything for the house she takes the money and gets it. If it is something exceptional, we talk over the advisability of buying it and whether or not we can afford it. In fact, she runs the house and has no one to account to, and I am glad she does, for she understands that

department and I do not. She can make one dollar go as far as I can two, and we have had no cause to change the arrangement. We are chums as well as husband and wife, and I find that I, at least, am the gainer.

C. H. D. B., West Virginia.

DEAR FIRESIDE EDITOR: My experience is that a wife is held to be of account only when a man is short of money and wants to borrow on the home. Then she is treated in all ugly ways until she signs the mortgage that by and by is to force her and her children from their beloved home. Oh, yes! Hold on! She is good for something beside, and that is to lay all blame on whenever anything goes wrong, and to put up all kinds of lies about, even if she works and slaves and plans; even if she buys a good many groceries and most of the clothes for herself and the children, seven in number.

Well, I was going to answer the question, "What is It to Support a Family?" According to the idea of some men I know, it is to let your wife slave as best she can with cows and chickens and boarding school-teachers and so forth, and if she can't cover expenses that way let her take the rest on credit, and don't pay the bill. But just the same, when the banker that holds the mortgage comes around you tell him that your wife ran up such big store bills that you haven't anything left over to pay on the mortgage. *That's the way to support a family.*

Some readers of FARM AND FIRESIDE please tell me what they would do if they were in this wife's place.

DESPERATE, North Dakota.

DEAR FIRESIDE EDITOR: I have been a reader of FARM AND FIRESIDE for more than twenty years, and was very much pleased with the article entitled, "What is It to Support a Family?" I would like to have persons of experience give an estimate of what would be a reasonable amount in dollars and cents to support a family of three, supposing the mother takes the responsibility of attending to all household affairs, such as clothing, groceries, and home furnishings, exclusive of rent and fuel; home and farm paid for. Hoping to have a reply through the columns of FARM AND FIRESIDE, Respectfully, L. B. O., Ohio.

PEACH PUDDING—Rub two cupfuls of flour and one heaping tablespoonful of butter to a cream, add half a teaspoonful of salt and two teaspoonfuls of baking powder. Beat one egg, add three fourths of a cupful of milk, pour into the flour, and beat well. Pour into a buttered pan, so that the batter will be about an inch thick. Place halves of canned peaches over the batter, with the pit side of the peach up, filling the hollows with sugar. Bake, and serve with liquid sauce.

BOLTON PUDDING—This is an English pudding, and is very good. One cupful of flour, two tablespoonfuls of butter, half a cupful of sugar, one egg, one teaspoonful of baking powder and a little lemon juice. Rub the butter into the dry ingredients, add the well beaten egg and a little milk, if the batter is very stiff. Butter a pudding mold, put a large spoonful of any jam in the bottom, and pour in the batter. Steam for one hour.

FRIED APPLES—Cut apples in broad, thick slices and partially fry in butter. Just before they are cooked sprinkle sugar over the top. Serve with bread and butter for Sunday night supper. They may be prepared in chafing dish.

The Burden of Yesterday

[CONTINUED FROM PAGE 20]

alone together, and then, each hiding his secret anxiety from the other, the old freedom of speech and heart-whole happiness was missing.

About this time Faith received a letter from Honolulu from an old school friend, whose husband was superintendent of education over there, offering her a splendid position. She showed the letter to Drake, who commented laughingly, holding her close.

"Tell her you can't go as far away as Hoboken."

She laughed too, but she did not answer the letter.

Then came an evening when she and Laura were temporarily alone in the living-room.

"Where are you going for your honeymoon?" Laura inquired.

"We've decided not to take a wedding trip," Faith answered with an unconscious sigh.

"No trip! Why?"

"Oh, Will doesn't feel he can afford one just now," Faith answered unthinkingly, entirely innocent of innuendo. "We can wait a few years to do our traveling."

"You mean until poor Herbert's debts are paid?" Laura took her up instantly.

"No—no—why, Laura dear, I—"

"Oh, I know what a burden poor Will carries! You never can guess the agonies I've endured since he has been engaged. Don't you suppose I realize that I and my two poor helpless little children ought not to be here? I hope you may never be so cruelly placed as I am."

Gentle Faith flushed scarlet with irritation. Was this how her tactful efforts to keep peace with Laura were succeeding?

"I think I am now!" she retorted, her voice shaking. "You make me feel like an intruder, a disturber of the family peace."

Of course Laura burst out sobbing, and Faith, repentant of her flash, immediately healed the breach and spoke in the sweetest, most mollifying way. So by the time Drake returned to the room and his sister-in-law left it, there remained no traces of the tiff except Faith's shaken, nervous manner.

Loud sounds of childish quarreling suddenly came in from another room, and Faith went white as she heard Bernice crying bitterly.

"Dear," Drake questioned, his face as white as hers. "for Bernice's own good, don't you think she'd be better off at some school?"

Faith was in the worst possible mood to receive such a suggestion. Worn out and irritated by the strain of the past week she suddenly flared up and sobbed.

"Of course I can make all the sacrifices for your family. They come first. Laura won't leave her children; Mrs. Drake can't do without Florence; but I can be separated from my sister. Nobody makes any sacrifices for me."

It was an outburst of jangled nerves. Drake protested, but Faith was roused beyond soothing. "I can't stand it!" she insisted. "I've undertaken the impossible. We can't get married while the burden of yesterday is tied to us both. It isn't your fault. It isn't mine. It's just circumstances that are too strong for us. I am going to Honolulu to keep on teaching school. It's best for us all."

[TO BE CONTINUED]

Little Dress Notes In Winter Fashions

Designs by Grace Margaret Gould

Drawings by W. C. Reynolds

Cutaway coats with fancy waistcoats of bright-colored fabrics are very modish these midwinter days.

Blouses of net are trimmed with narrow bands of fur or marabou or show collars and cuffs of bright-toned brocaded materials.

Tassels of colored beads and silks are used extensively as trimmings.

Silk flowers are used to conceal the closings of fur neck pieces.

Coats of chinchilla, zibeline and bouclé worsted are in good style for cold weather wear.

Embroidered net collars are much worn. In de Medici effects they are especially smart.

Striped moire shopping bags with long moire strap handles are fashionable.

Roman striped silks are used for separate waists and girdles, the stripes being in soft tones.

Skirts still keep narrow toward the bottom, but tunics and draperies give fullness at the waist line and over the hips.

Hair is now worn high on the head, the soft coil coming just to the crown of the head and the front arranged in a low pompadour or parted at the side.

Wide girdles and sashes of soft materials in bright colors finish the waist line of many of the fashionable dresses.

Hemstitched handkerchiefs with hems from one to two inches wide are new and popular.

Watches and locket hang low and are worn on black moire ribbon about half an inch wide.

The long sleeve is favored for general wear, the short one for dress occasions, and sleeves are in kimono, mandarin or raglan effect, or set in large arm-holes.

Plaited nets and laces are much used as trimmings. The favored neck finish is a double plaiting, with a band of fur or velvet ribbon in the center: one frill stands up, the other lays flat.

Hair bands of twisted maline are pretty. They are made in black, white and colors and are finished in the center front with two small wings of maline, edged and studded with beads.

Novelty girdles to wear with serge and fine wool suits are made of braid and woven silk in black, blue, red and plaid.

Dark green and brown are fashionable colors for street clothes.

Fur is a favorite trimming this winter. Many times there will be just a bit of it on a costume—perhaps outlining the neck, trimming the collar and cuffs, or the buttons will be fur covered.

Many of the metal laces show interwoven threads of bright colors.

A very smart neck accessory is a tiny bow of fine black tulle, clasped in the center with an equally tiny buckle of pearls or rhinestones. The full length of the bow is two and one-half inches and it consists of three flat folds of the tulle at either side.

Dog collars of fur and marabou are very modish fastened at the left side and trimmed with velvet or satin bows.

Tunics are fashionable this winter and many an old skirt can be made quite up-to-date by the addition of a plaited or gathered tunic of voile, satin or velvet.

The very newest thing in a bracelet to wear with an evening gown is one made of black velvet ribbon. The ribbon is about an inch wide and either a tiny artificial flower is attached to it or some simple fancy pin.

Side combs are out of fashion, but the big shell pins, either plain or studded with rhinestones, are much worn.

Cream net often takes the place of batiste and lawn, these days, in the development of collar and cuff sets, and a bit of colored embroidery adds a smart style note.

Many of the patent leather button shoes have cloth uppers, and it is fashionable to have the tops of your boots match in color your dress.

Coat linings are very attractive this season. Many of them are not only bright in color but show pretty flower or smart conventional designs.

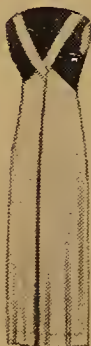


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No. 2410
No. 2411



No. 2435



No. 2410—Guimpe Waist with Vest

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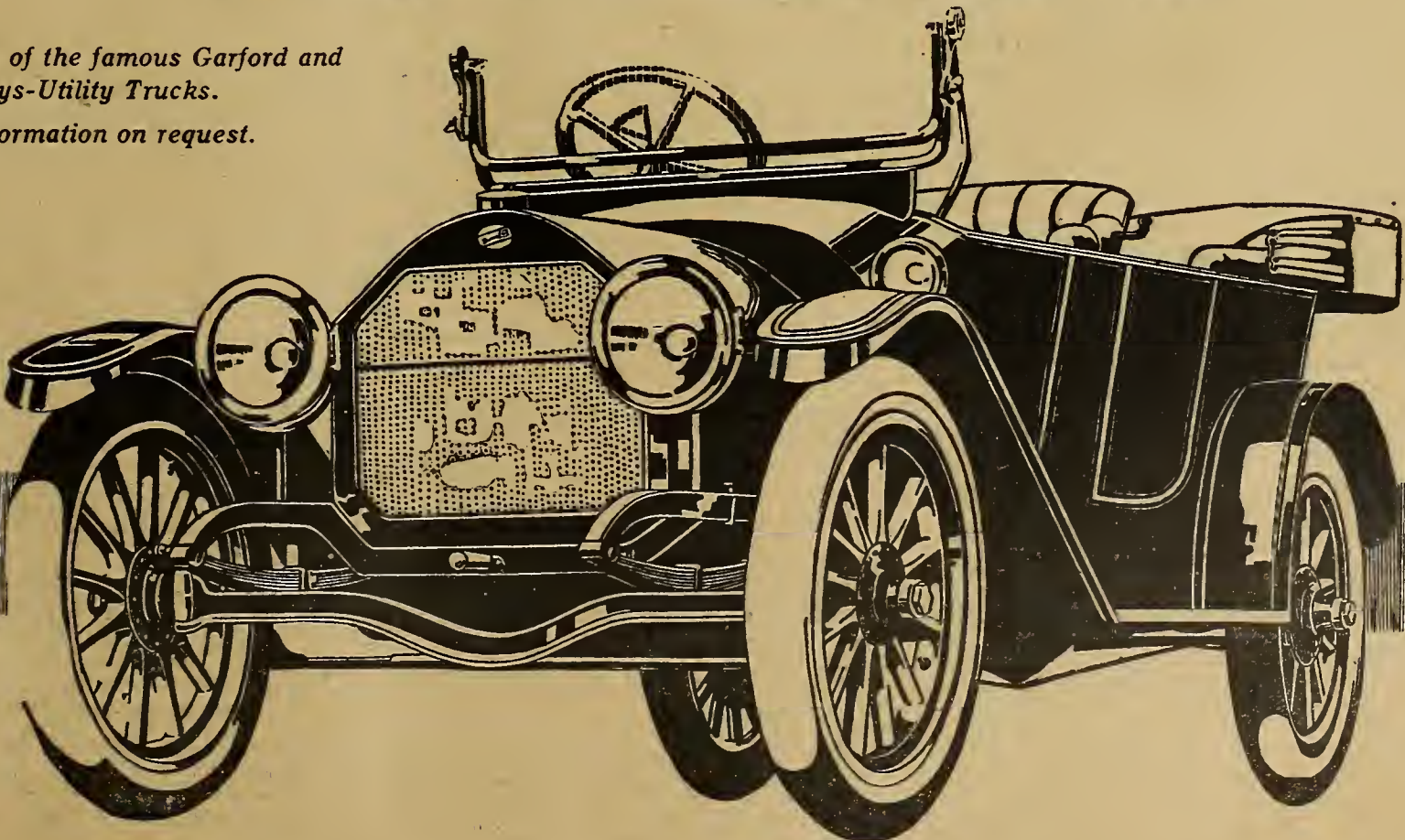
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P. O.....

Shipping Sta.....State.....

Number of Sheep.....Hogs.....

Cattle.....Horses.....



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Mr. Feil is a Registered Pharmacist, a graduate of the Cleveland School of Pharmacy and of the National Institute of Pharmacy. He has been engaged in laboratory work for more than 25 years and was formerly assistant to Dr. Nathan Rosewater, former Chemist of the Ohio State Dairy and Food Commission, for many years has been engaged in compounding veterinary remedies.



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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

SATURDAY, JANUARY 31, 1914

5 CENTS A COPY



"No, sir, ladies and gentlemen, I don't kill sheep"

LOOK FORWARD! THESE GOOD THINGS ARE COMING!

Saint Valentine

February is a month of many festivals. Pre-eminently, of course, there is Saint Valentine to be reckoned with, that teasing, ogling saint who goes about with his quiver of arrows, seeking out hearts. He has whittled several arrows for FARM AND FIRESIDE, and we hope they will fly straight to their marks.

George Washington

Then there are the feasts of our two heroes, the courtly and yet simple Washington, single-hearted in his devotion to our cause, unmoved by personal ambition, who, with his iron hand in an immaculate ruff, shaped us into a nation; and that of the most dearly beloved of all our great men, Lincoln. We call up reverently his infinitely sorrowful face, tortured, as it were, into irregularities by the struggle of a soul which always saw every side of a question, but which was forced by circumstances to choose one side and maintain it. While we almost weep, our hero begins to recount inimitable stories, and we recall the nation waiting for its salvation till the jokes were finished. Of both patriots we shall have something to tell.

Manners at Table

It is not too late to make good resolutions. FARM AND FIRESIDE will have something to say about knives and forks, quilts and pie, very suggestive of a certain reform.

In the Everglades

An account of how the truck farmers in the new Everglades were plucked by the commission merchants, and how they are struggling out from under this incubus.

From Brick Mason to Farmer

Most of the back-to-the-land stories are overcolored. But we have one from a man who has made a success along lines which are open to thousands who live in cities or on rented farms. This man was a mason, and in five years has become well off in farming. Coming soon.

Hens as Cultivators

How to utilize the hen's scratch—and at the same time realize two dollars per hen per year in cash. It has been done, and we shall soon tell you how it was done.

Mother of Heroes

How many women see in their motherhood an opportunity to serve their country? Are there not many more who look upon it as an investment upon which the years will pay interest to them in the form of care and assistance from the children they have reared? Which is the nobler interpretation? On one of our pages will appear a story of a woman to whom motherhood was an opportunity, not an investment.

How to Have an Income

In our series of articles on ways to make pin-money, we shall offer two practical suggestions to farmers' wives and daughters.

Through-the-Week Activities for Sunday Schools

An easy and delightful evening in a church parlor will be described.

The Child at Home

Ann will give her baby his bath for the first time herself. A new problem will appear in the adoption of a sickly child, absurdly named Rosaltha.

Do You Believe in Fruit-Growing?

An Oregon reader says he does, and he points to some evidence which is pretty conclusive. And it wasn't all sunshine on his path either. But the final results please him.

Eggs for Hatching

How to ship them, that's the question now being raised everywhere. Parcel post and express are available, but will the eggs go through safely? A poultry-raiser in the Middle West answers in the affirmative, and he tells why he so answers.

Washing and Working Butter

Farm-made butter will never cease being in demand. At least that is the way it looks now. And so when H. F. Judkins, butter expert, tells how to handle butter on the farm he will be listened to, both by producer and consumer.

The Horse Talks

That is what hundreds of readers have told us in the last few weeks, and they have told how to start him—successful, humane ways. But very few have said why the horse talks. Prof. Edward Vaughn, however, has written us his opinion on that point, and we are going to print it. It's extremely interesting.

WITH THE EDITOR



He is Best Educated Who Would Learn

A newspaper just received prints the picture of an old Missouri woman who is the oldest First-Reader pupil in the world. She is 83, and is learning to read. She is the best educated person in her neighborhood, for in her old age she still wants to learn. "In the schoolroom," says the story, "she is like the average bright First-Reader pupil, only she never fails to pay the closest attention." She has gone about halfway through her reader, and is far ahead of her small classmates because she reads a good deal out of school.

I think the greatest mistake we make in our school system is to take it for granted that when our young people cease to attend the regular school they must abandon study. It is a tragic mistake. Some things we can best learn when children—things that tax the memory and do not appeal to the reason. But if I wanted to educate a community in the really important things of life, literature, and art, I would take the people between twenty and forty—if I could induce them to attend classes.

I wish every one of us could take the roofs off all the houses in any school district where this is read and see what is going on of an evening inside. The homes are filled with women getting supper, men eating, women washing dishes, families sitting about the fire after supper toasting tired feet or talking casually about the day's work. Horses are being curried in the barn, and stock looked after for the night. The mother is doing some necessary sewing. Mostly the people sit silent because there is really nothing to talk about. And every schoolhouse, nearly, is dark. There is the stove, ready to heat the room; the desks and blackboards, unused.

Here and there, in almost every house, in fact, will be found one or two reading. But they are reading and thinking alone. There is no touch of minds. The desire for knowledge is in some a flame burning fiercely, but in most a mere flicker, which dies out in a few years for lack of the draft which more flames would give it.

You and I Cannot Excuse Ourselves

That old lady in Missouri—for more than an ordinary lifetime she has wanted to learn to read. In her childhood, schools were not free, and she could not be taught. Then came the work of life; then children, and a home, and all the drudgery of a woman's life; and all the time the great world of the printed page was sealed to her. Only now, in a night school, is she able to start, nearly eighty years late, on the intellectual journey. All praise to her for her bravery in starting now!

But let us look again at the homes in our school district. Over there is a home with a shelf of books—maybe a library. Here is a man who could take charge of some sort of class in the neighborhood night school; over there is a woman who has studied some science or art which she could teach. In every home is some man or woman who knows something which all would be glad to know. All they need is a start, an impulse, a servant to find out what each can do, and work out plans for them.

I should like to see the older people going to school, as the good woman in Missouri is doing. I should like to see classes in reading, writing, and arithmetic for those who want them. But in the main we are past those elementary things; and if we think we are educated merely because we are past them, it might be a good thing if we could forget how to read and write and cipher, and start all over again. I'll bet on the Missouri woman to become better educated before she dies than half the people in her circle of friends, for she is moving while they are in all probability standing still or going backwards. If she lives five years—and I hope she may—she will distance five out of six of them, for she is going somewhere. However, those of us who are conscious of a desire to learn have a great advantage over her. We already have the tools with which we may learn, and we are younger. Why should we not start? Why should we wait for someone from the outside to come in and teach us? Why not teach each other? Why not have a night school for the purpose of learning the things we need to know, even though there aren't many of us? Why not use the schoolhouse of nights? And if there aren't enough of us for this, why not start night classes in the homes?

If the thing we are studying calls for a teacher we can find one in almost any neighborhood, on almost any subject. If we can get a few people together for the study of almost anything, we can get help from our colleges, our Y. M. C. A.'s, or from some source.

Let's Start on Some- thing Easy

Suppose we find a few people who are interested in cattle-breeding, or cooking, or poultry-breeding, or fertilizers. There are enough really fine and practical things in print about any of these subjects to keep us busy reading and discussing for a year. Some of these things we won't agree with. They may not be suitable to our conditions. We can talk these matters over, and test them by our own practical experience. In that way we shall learn something, and if we make up our minds that the experts are wrong we can get one of them to come and let us tell him so. He'll enjoy it, and we may learn something, even from an expert. Possibly when we meet face to face we'll find that he is just folks after all, and that he will agree with a good deal we say; and maybe he'll be able to teach us something. In the course of a lifetime of study he should have been able to learn a lot which will be new to us.

We ought to have someone to do the work of getting up these meetings and classes—anyone can do it if he is just made to. We don't need any flamboyant constitutions and by-laws—just let everyone in the district be a member, and let the majority rule. And after a community has had the first meeting or so, the big meeting will divide up into classes to study, with an occasional big meeting with something to eat and some music.

We all need to learn to read a lot of things. The First Reader of life is a book none of us have read half through. Let's not stop going to school!

Robert L. Smith

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PUBLISHED BY
THE CROWELL PUBLISHING COMPANY
SPRINGFIELD, OHIO

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago, Illinois
Copyright, 1914, by The Crowell Publishing Company
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter

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Subscriptions and all editorial letters should be sent to the offices at Springfield, Ohio, and letters for the Editor should be marked "Editor."

Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVII. No. 9

Springfield, Ohio, January 31, 1914

PUBLISHED
BI-WEEKLY

Apt Long-Distance Forecasting

SINCE the publication of the discussion of farm-credits betterment by means of building and loan associations, in the issue of FARM AND FIRESIDE for November 22d, our attention has been called to a forecast contained in U. S. D. A. Report No. 3, published in 1892. This forecast is as follows:

"Such a means of credit improvement is to a great extent supplied by institutions like the people's banks of Europe and the building and loan associations of the United States; and the more these institutions are perfected, adapted to varying wants, and disseminated among the people, the more will the present top-heavy fabric of modern credit be broadened in its foundation and narrowed in its overhanging superstructure. In fact, few things could do as much to guard the business world against the financial crises which so frequently paralyze its industries as the general existence of institutions which tend to retain within the neighborhood of its origin all the capital for which there is a potential local demand, and thus to keep it as fully as possible under the continued oversight of its owners."

This discussion of co-operative credit associations was prepared under the direction of the statistician, Edward T. Peters. Is it not rather remarkable that this avenue of farm-credit improvements has been overlooked ever since this forecast was made twenty-two years ago? This also shows how little the present agricultural experts in Washington profit by the wisdom and experience of their predecessors.

To Farm Owners

FARM AND FIRESIDE is in possession of literally hundreds of letters from people who are interested in getting positions on farms. Most of them are from men with families, who for some reason want to make a new start. Some have become bankrupt in bad business ventures. Some have been ruined by floods, droughts, or other casualties. Some are men who have employment in cities as mechanics and desire to get on farms. Some want to change climates on account of health. Some are farm hands who desire better conditions and a chance to keep some chickens and grow vegetables. Most of them are shown by their letters to be intelligent, and the tone of most of them seems to indicate industry and ambition. A great many of them will have to be furnished everything and will work on shares. Some want regular pay. Most of them want houses in which to live. Out of the collection we should think a great many excellent tenants and employees could be obtained. We are ready to receive letters from farm owners who are interested in the matter of getting the hands to the acres on just terms.

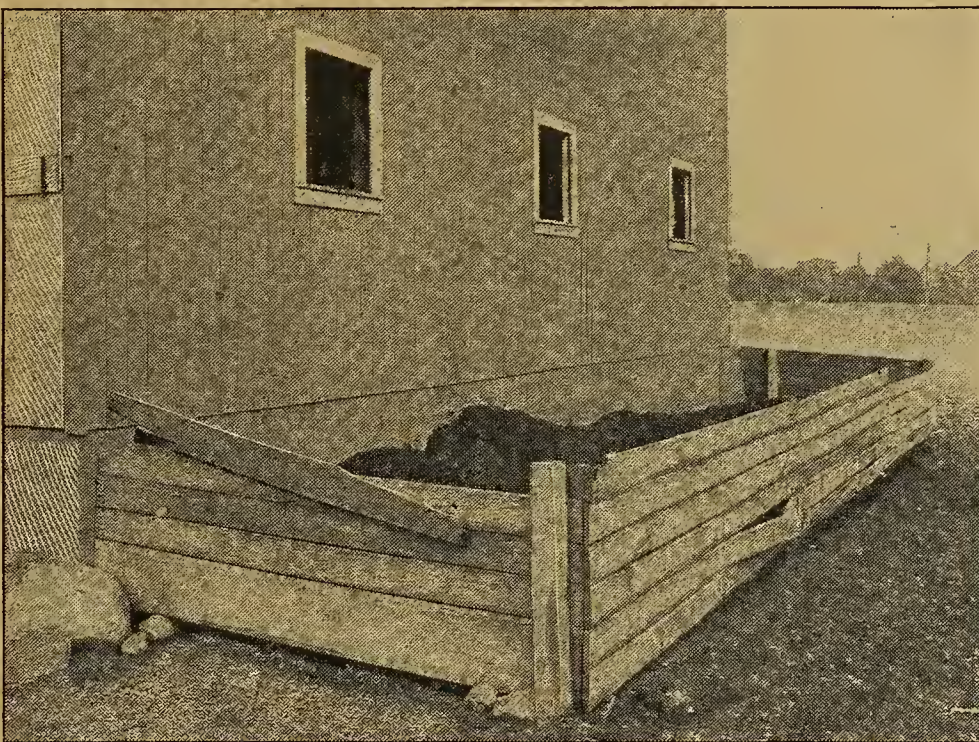
What Do Farm Women Want?

WE HAVE said that the first thing millions of them want is running water in the house. Now that Secretary Houston has officially agreed with us we feel more sure of it. "Analysis of the small part of the letters yet digested," says the Secretary, "shows that farm women desire assistance in all phases of home management, especially as to ways of securing running water, introducing household power machinery and labor-saving arrangements, and providing better hygienic and sanitary conditions." And the first of these is running water, important as the others are.

A NEWSPAPER writer says, "As has always been the case, the farmers have not sold their grain around the best prices, but have waited for a decline in order to sell the greater part of their surplus." Which is about the same thing as saying that the river, as usual, has failed to carry off the most of its water when dry! If the farmers had sold their surplus earlier, prices would have been lower. Prices went down because farmers were selling freely—tempted to do so by the top prices.

Double Trouble

A MICHIGAN fruit-grower writes us as follows: "This year has been a poor fruit-crop year here. Prices were fine, but late frosts cut the crop down to about one fifth of a full crop. I believe in keeping one's troubles in the family, but the fruit-grower certainly has some problems to solve. Here in Michigan a new package law increased the size of the quart



A MANURE pit is needed on many farms, for it is often impossible to haul the manure to the fields as it is produced. This pit has its faults, but it prevents the scattering of the manure by the chickens and pigs, and that's a big advantage. The disadvantage of boards for the sides is easily seen, and this pit has no concrete floor. If it had it would be much more completely fitted for its purpose, and concrete sides would make it even better. But sometimes this question comes up: Does it pay to spend two dollars to save one? And while we are deciding on whether the expense is really more than the income, perhaps it would be well to put up a pit similar to this one.

package. The traveling fruit-picker increased his price at the same time, and the frost cut the crop down four fifths. When the goods got to South Water Street the new packages brought no more than the old ones which were competing. I believe in full measure. In fairness to the consumer there should be a standard-sized package holding the full amount, but we ought to reap the reward of the full package when we give it.

"And right here is a good place to say something about 'facing' fruit. Usage requires the packer to fill his boxes rounding full to prevent settling. I have seen many grocers take off the 'face' of the boxes, shake the box up, or turn it upside down in the hand, turn it back again, and have a full box ready for sale. Two full boxes of 'overrun' can thus be made from the 'facings' of a sixteen-quart case. These extra boxes are clear profit for the dealer, but are clear graft at the expense of the honest pack and the consumer. It seems to me that the consumer should have all that's packed in the box, including the 'face,' and the honest pack would get recognition."

Here's an abuse that is perfectly clear, and mighty hard to get at. What shall we do about it? If the larger package required by law is tampered with in the grocery stores like this, what's the use of the law?

Danger!—Stop! Look! Listen!

THE writer of this lives on a back road, which under the Shackleford Bill, would receive twenty dollars per mile from the Government for helping to improve the road.

And the twenty dollars would not do a particle of good. It would be about as effectual as the nailing of one shingle on a roof that needs to be replaced with a new roof.

The writer happens to know that our Washington representative, who called attention in the Farmers' Lobby recently to the weakness of the Shackleford plan, and all others like it, lives on a main road which is largely macadam pavement. Mr. Welliver's road would receive fifty dollars a mile. But Mr. Welliver also seems to think the plan of giving small sums per mile to rural routes a weak and unwise one.

We are in danger of making the worst possible of mistakes in this matter of federal aid to roads. Not a cent of United States money should go into the hands of counties. Counties almost universally waste most of the road money they handle. No State should receive a cent of United States money for roads until it has established a state road fund under the administration of competent road engineers. And no State should receive a cent until it has put up a dollar for every dollar of United States money and accepted the co-operation of the engineers of the United States in expending it.

The writer lives in a State which has no state road fund and no state supervision of roads, but he wants the system established on such a basis that localities with their piffing politics will not control the funds of either State or nation, and on which the strict supervision of the Federal Government will insure good work and the absence of graft. He is willing to wait, so far as his roads are concerned, until the thing can be done right. He wants no distribution of twenty dollars a mile, or thirty or fifty, to be frittered away by path-masters and county boards. He wants efficiency established in the building of the better roads of his community, and that means he is looking forward to efficiency in every neighborhood. We had far better wait for a while, for if the Shackleford

Bill passes we shall simply have a huge pork barrel, a huge scandal, a huge and growing burden of taxation, and we shall not get good roads.

According to Colorado experience farm horses which are idle, and young and breeding stock, may well get half or two thirds their roughage in the form of silage. Working horses should be given little of it or none. Care should be taken that silage fed to horses is neither frozen nor mouldy.

Doctors Disagree

AT THE Oregon Experiment Station they don't think much of sweet clover. They say that live stock don't like it, and that if it escapes from control it is likely to become a pest. At the Iowa Experiment Station lambs fed on sweet-clover hay, corn, and a certain amount of oil meal made an average gain of 30.7 pounds; on the same ration, save for native-grass hay in place of the sweet clover, the gains were 20.3 pounds; while with alfalfa hay it was 34.4 pounds. Sweet clover does sometimes mingle with the alfalfa, but will last only two years if the alfalfa is cut. And who ever saw any cultivated crop injured by sweet clover as a "weed"?

The Soy Bean for Protein

An Experience of Twelve Years with This Legume—The Varieties That Are Best—How the Crop May be Utilized

By Chas. B. Wing

The name of Wing needs no introduction to any farmer, and the name of Chas. B. Wing needs introduction to but few. Chas. B. Wing, primarily an Ohio farmer, specialist in alfalfa, soy beans, and seed corn, has been studying crop production from every angle, and the beauty of his work lies in the fact that he continues to study. He never believes that he has reached a place where farm crops have no more information in store for him. That makes what he says of very great values to everyone who listens to or reads his words.—EDITOR.

ABOUT twelve years ago we read somewhere about soy beans, a crop whose grain from chemical analyses seemed to be richer than oil meal, and whose yield indicated profitable returns from the soil, and as we were particularly in need of rich protein feeds at that time we began growing the crop for its grain. We selected our variety from its chemical analysis only. The Ito San showed up quite rich in protein, about thirty-six per cent., and we began with this variety. Later experience has shown that it is just a little bit foolish to select a plant from its chemical analysis only. That is to say, with soy beans, if we were choosing a variety to-day, we would not pay one half as much attention to one or two per cent. protein in the grain as we would to the habit and yielding ability of the variety that we were choosing.

We Tested All the Most Promising Varieties

We put our first plot out on clay ground of only moderate fertility; in fact, rather poor ground. The Ito San forms pods close to the ground naturally, and seldom grows very tall. Consequently when we came to cut the grain we lost many of the lower pods because they were practically on the ground and the mowing machine would go above them. However, we secured a moderately satisfactory yield and were more than pleased with the feeding results. The second year we put them on rich bottom ground, and here the pods formed high enough off the ground so that we could harvest them. Unfortunately, however, we undertook to run a weeder over the field just about when the beans were ready to come through. We killed about one half of the plants by breaking off the tender cotyledons.

A year or so later government crop experts commenced investigations concerning this plant and imported several hundred new varieties. We immediately secured from them the varieties which they recommended as being best adapted to our soil and climate, and began testing these out. Also, at about the same time, the experiment stations began work on them to a certain extent, and some more farmers began growing them, so that each year we selected new government varieties to test as well as experiment-station varieties and those in the hands of farmers themselves.

In fact, we tested new varieties from any source that we could obtain those that had promise of merit, and we have continued this work up to the present time, having tested out a great many of these new sorts and having discarded one after another of the least promising ones until to-day we have in our experimental grounds a few acres, including twelve or fifteen different varieties, all of which have decided merit but which we will probably continue to work on until we reduce the number down to six or eight of the very best.

This experimental work has been very fascinating for us, and while it has cost us a lot of money we have taken a great deal of pleasure in it. In the beginning we tested out many varieties that were not at all adapted to the Corn Belt. Of late, however, we have

If we were choosing a variety to-day we would not pay one half as much attention to one or two per cent. protein in the grain as we would to the habit and yielding ability of the variety

been able to be more discriminating, and to test only varieties that are really good for Corn-Belt conditions.

We found certain varieties that would ordinarily grow only

eighteen inches tall, and that would mature three weeks earlier than there was any necessity for. The Ogemaw was one of these. We found other varieties that, under favorable conditions, grew six feet tall and were moderately late. Among these we might mention the Meyer, Haberlandt, and Wilson. There were varieties that were entirely too late, such as the Acme and Mammoth, late enough so that it would be only in exceptional seasons that they would mature grain in the Corn Belt. There were some varieties with splendid habit—that is, standing nicely erect; while others were almost as recumbent as cowpeas, making the cultivation and harvesting of them very difficult indeed. Some varieties, while producing liberally of grain, had short, stubby stalks, making them unsuitable for forage. Other varieties were tall and slender, not yielding freely of grain, but splendidly adapted to forage. There were also intermediate grades.

Some of our best varieties have come direct from the Government, some from experiment stations, some from growers, and a few of the very best have originated from sports which we found in with some other variety. The varieties which are on the market to-day are principally as follows: Ito San, Ebony or Black Beauty, Mammoth, Holly Brook, Early Brown or Brownie, Ogemaw, Medium Early Green, Peking, Jet, Wilson, and three varieties which we have named ourselves, Wing's Mongol, Wing's Sable, and Wing's Mikado. It may be of interest to briefly describe these varieties.

The Ito San is as early as any variety that we have ever tested: at the most not more than three or four days' difference between it and any other that we know of. It is a fairly good producer; one that can be pretty well relied upon. In habit is just fair, not quite erect enough and pod forming too close to the ground; also not particularly adapted to poor soil, and is not particularly adapted to forage.

The Ebouy is a black bean, about a week later than the Ito San, with a still poorer habit, but similar characteristics in other ways.

The Mammoth is a splendid bean south of the Ohio River; is reasonably good for forage north of the Ohio, but will mature seed in our latitude only under unusual conditions or exceptional seasons.

The true Holly Brook is another Southern bean, very similar to the Mammoth, although there is a bean known in the Northern States as Holly Brook which is well adapted to the Corn Belt, a good yielder, and only about a week later in maturing than the Ito San.

The Brownie, when growing, looks so much like Ito San that it is difficult to distinguish them apart. It yields about the same, matures exactly with the Ito San, and is no improvement over the Ito San in any way that we can find.

The Ogemaw is rather a smaller plant than the Ito San, but matures exactly with it. We consider the Ogemaw slightly inferior to the Ito San.



What seven weeks of good growing weather will accomplish

The Medium Early Green is an old standard variety that has been grown for years. It is about seven or eight days later than the Ito San; is well adapted to forage and produces a quantity of grain, but we have found it to be the worst bean that we have ever tested in the matter of shattering its seed.

The Peking is a sport that we found in a government variety. One of the plants that we discovered of this bean produced six ounces of seed, the most by weight of any soy bean plant that we ever saw. It is a splendid variety for forage and also very good for grain. The stalks are slender, stand beautifully erect, and it makes a good yield; is about ten days later than the Ito San.

The Jet is similar to the Peking, excepting that it has usually fewer branches, grows a little taller, matures only five or six days behind the Ito San, and has not quite as good a habit; that is, is not as erect as the Peking.

Nearly All Soy Beans are Self-Fertilized

The Wilson is one of our favorites for forage. On very fertile soil this bean has grown six feet tall for us, and we count on four feet with just moderate fertility. It branches nicely and makes a large yield of forage. It has not proven as heavy a yielder of grain for us as some other varieties.

Wing's Mongol is a bean that we secured from a grower and one that seemed to have no authentic name. It has proved with us to be apparently as heavy a yielder of grain, when given fertile soil, as any variety that we have ever tested. It does not particularly relish poor soil; but, given good, rich soil, we believe it is almost impossible to beat it. One of our correspondents in Missouri states that this bean made over fifty bushels per acre in test plot for him. It is coarser in its forage than the Peking or Jet, and will not make quite as much of it as the Wilson; matures about one week later than the Ito San.

Wing's Mikado was developed from one very high-yielding plant that came as a sport in another variety. This bean is very similar to the Mongol, and we really do not know which of the two is the more valuable.

Wing's Sable is a variety that we have built up ourselves and one of which we think we have much reason to be proud. We discovered years ago that soy beans are practically all self-fertilized. Therefore, that if we could select one individual plant having the characteristics that we wanted and a very heavy yield, the probabilities were that all of these characteristics would be transmitted to its seed and would remain constant. We made selections all over a large field of soy and put these plants to themselves. The very best of them were put in plant-row plots, the seed from one plant forming each row. These rows were accurately measured, were kept separate when thrashed, and from those which yielded the heaviest, and also which had just the characteristics that we wanted, we selected a small amount of seed which we have increased until we can sow a moderate field with it. This variety is ten or twelve days later than the Ito San. It is a dual-purpose variety, splendidly adapted to forage or grain; a good yielder, and one that stands poor soil well.

They Need a Good Seed Bed

We have gone into detail on this variety work simply because we think it is of the greatest importance, just as much so as it is to classify different breeds of farm animals. If you wanted to buy a draft horse and were informed on the subject, the probabilities are that you would buy a Percheron instead of a Morgan, and if you want to grow soy and live in the Corn Belt, it is more than probable that your selection of the right variety of a soy bean would be just as important as the selection of the proper horse.

The best of these varieties have yielded for us an average of about thirty bushels per acre in test plot. Yields under field conditions ordinarily make twenty or twenty-five bushels. In forage we count on the best varieties furnishing ten tons of ensilage or green feed per acre; probably two to three tons of dry hay.

The requirements of soy beans do not seem to us to be so wonderfully much more exacting than those of ordinary farm crops, with the possible exception of the harvesting, which is more difficult than with most of crops. They require a seed bed as good as you would prepare for corn. You must wait until the ground is warm in the spring, warmer than for corn. We never seed before May 20th, and would wait until June 20th, if necessary, in order to get warm soil. One year we seeded about May 20th, thinking it would very soon warm up, but it did not for two weeks. The plants came up delicate and remained stunted all season.

The seed must not be planted deeper than about an inch. We aim to just barely cover, and ordinarily get the seed in not more than one-half inch deep. They will not do well if seeded in extremely dry ground, when drought conditions remain constant for two or three months after seeding. Of course you would not expect any farm crop to do well under these conditions. We plow the ground and fit as for corn. In fact, it is very desirable to have a nice seed bed because the crop quite largely depends upon this. We usually use a Superior grain drill, eleven disks, seven inches apart, stopping all but three, and thus making our rows twenty-eight inches apart, and we aim to drop one seed about every one and a half inches. If you have a perfect seed bed and every seed comes, this will make the stand possibly a little too thick, but ordinarily, in field conditions, not every seed makes a plant, and we generally get about the kind of stand we want when sowing in this way.

We inoculate always, as a plant seldom finds its own inoculation. We do this by putting inoculated soil in the fertilizer box to the drill and sowing about thirty to fifty pounds per acre right in the bottom of the furrow along with the beans. In this way we always succeed in getting perfect inoculation. If your seed bed has been properly prepared and if the ground is warm, the beans will come up ahead of the weeds. This is quite necessary.

We begin cultivating about as soon as the second leaves appear. The first cultivation is pretty tedious, but after that it becomes easier, and with rows twenty-eight inches apart and running reasonably straight we have no particular trouble in getting the cultivation properly done. We use narrow row cultivators, the Buckeye pivot beam and pivot axle are all right, and so is the Oliver pivot tongue. These are all two-horse cultivators and we use them in the cornfields or anywhere else just as we would any other cultivator. The first one or two cultivations we throw a moderate amount of the dirt to the plant in order to smother the weeds that might be coming up in the row. The third cultivation we run shallow, and just as level as

Last winter our herd of thirty dairy cows, when changed from soy-bean straw to clover hay, held their flow of milk, making no change one way or the other. We noted this particularly

possible in order to keep the field from becoming ridged. A level field greatly facilitates harvesting.

We have never made soy beans into hay, but we suppose they would be somewhat difficult to cure. We have always used them either for ensilage or for grain. When cutting for ensilage we wait till the beans are well formed in the pods and just before the leaves begin to turn. When once the leaves begin to turn they mature very quickly and there will be much loss of foliage unless the work is attended to promptly. When harvesting for grain we wait until all the leaves fall and until the pods, on the upper part of the plant have turned brown; probably about one half the pods for the entire plant will be brown and ripe when we start the harvester. We are now using exclusively a Deering self-rake—the old-fashioned machine we used to cut clover seed with. It has arms somewhat like a self-binder, a table that gathers the plants, and when sufficient quantity is gathered the beans are dumped off to the side so that neither horses nor wheels run over them. We aim to start the harvester as early as possible in the morning, daylight if possible, and in very dry weather we will usually have to stop running by nine or ten o'clock in the morning, as the pods will begin to shatter by that time. We let them lie in the bunches, as dropped off from the machine, from twenty-four to forty-eight hours, then gather them together into little shocks about three feet high and quite narrow.

Leave them in these shocks until the sap is pretty well dried out of the stalk, say for a week in dry weather. Then put them into stacks or in the mow until they are thoroughly cured, or you can leave them in the shocks about two weeks and thrash out of the shock very nicely. If put into stacks or mow they will go through a moderate sweat and can then be thrashed out very nicely. Do not let them get too ripe before starting to cut, as there is much greater loss from shattering. On the other hand, if cut too green the yield is lessened and there is greater danger from heating while curing out. On this one point the plant is exacting. You cannot let the crop stand a week past the proper time without loss.

When thrashing use a bean thrasher if possible. If this is not possible use an ordinary thrashing machine with the concaves removed and the machine run just as slowly as possible. The ordinary thrasher will split the seed somewhat, but the slower it is run the less of this splitting there will be.

Sheep and Cows Relish Soy-Bean Straw

Now I am going to tell you one thing that none of you will believe until you try it. When we first began growing the crop we paid no attention to the straw. One year a man told us that it made good feed; in fact, that he valued it as highly as clover hay; and we tried it ourselves that year for the first time. The stalks are rather coarse and woody, and of course there are practically no leaves after thrashing. To our surprise both sheep and cows ate these stalks and pods fully as well as they did nice clover hay. We fed alternate feeds, clover hay once a day and the bean straw once a day. The cows would bawl for the bean straw and would not for the clover. Finally we turned them into the lot where we had just finished feeding a little stack, and took the clover hay away from them for a few days, just letting them have what they could clean up on the ground of scattered bean straw, with the result of a slight increase in the flow of milk. Since that time we feed the straw regularly and take care of it just as much as we would of good clover hay. Last winter our herd of thirty dairy cows, when changed from soy-bean straw to clover hay, held their flow of milk, making no change one way or the other. We watched this carefully at the time to see whether there would be any difference or not.

I mentioned the fact that we always inoculate. The plants do reasonably well without inoculation, but they seldom find their own bacteria, and as a result, when not inoculated, they are of course drawing all of their nitrogen from the soil. A good crop of soy beans cut for hay would probably make about five thousand pounds per acre. If inoculated there will be about thirty-two pounds of nitrogen soil draft from removing this crop. Thirty-two pounds of nitrogen is worth about seven dollars. When not inoculated the same crop will remove about one hundred and twenty-five pounds of nitrogen, worth about \$26.50.

Now as to the usefulness of this crop, allow me to show you the analysis as compared with some other feeds:

	Protein, per cent.	Fat, per cent.	Carbohydrates, per cent.
Soy-bean hay	15.4	5.2	38.6
Soy-bean straw	4.6	1.7	37.4
Alfalfa hay	14.3	2.2	42.7
Medium clover hay	12.4	4.5	33.8
Soy-bean grain	35.4	20.3	26.1
Corn	10.5	5.4	69.6
Oats	11.8	5.0	59.7
Wheat bran	15.4	4.0	53.9
Linseed-oil meal	32.9	7.9	35.4
Cotton-seed meal	42.3	13.1	23.6

I think it unnecessary to comment on the usefulness



When the crop is ready to harvest, delay means loss

of either the hay, the straw, or the grain, in view of the above figures. When it is further realized that the plant does well on poor soil there would be still less reason to doubt its usefulness. Finally, a good many people are using it to plow under for fertilizer, and our estimate of a good crop of about five thousand pounds is eighty-three pounds per acre nitrogen gathered from the air with inoculated plants, value of the nitrogen about eighteen dollars; usual cost of seed



Soy beans, as well as other legumes, make for bacteria a home in the nodules on the roots

per acre, one dollar; gain per acre over cost of seed, seventeen dollars, or seventeen hundred per cent. on the money invested.

Soy Beans and Hogs are Good Partners

Soy beans as a pasture crop are very well liked wherever they have been tried. For pasturing them when ripe, hogs are doubtless the best thing, because the grain is so rich that it would probably cause indigestion with any other stock, and also the beans will shatter when left standing, and the hogs gather them off the ground better than any other stock. For this purpose, also, a yellow bean is preferable to a black bean, because the hogs find them easier. Since the beans analyze rich in protein as linseed meal, and will produce say twelve hundred pounds of grain per acre, the money value is certainly considerable. I have not had much experience myself in pasturing these,

although I have had some. I have talked with men and corresponded with men who had considerable experience, however, and I have yet to find the first man who was not enthusiastic over the proposition.

To summarize just a little, use some discretion in the variety that you purchase. There are companies who advertise in this paper who can furnish you with the very best of varieties. Then take a reasonable amount of pains with your seed bed. We really think that a well-prepared seed bed, together with the proper seed and planted properly, is about one half the crop. Cultivate three times, just as you would for corn, and be careful when the crop is ready to harvest that you are not gone to the fairs or fishing for about a week's time when it is vital your beans should be gathered. Incidentally they will ripen just during corn-cutting time, and it will require a little diligence and forethought in order to be sure to be ready to take care of them just at the right time, and finally, by all means, inoculate, if you have any regard at all for soil fertility.

Know the Variety You Use

By Fred Telford

AT REGULAR periods stories of the discovery of new varieties of wheat, corn, or other farm products go the rounds of the press. The new variety makes a wonderful yield, or possesses extreme hardiness, or resists drought, or has some other desirable quality developed to a high degree. Newspapers and magazines that feature sensations give glowing accounts of the new variety; dealers selling the seed make the customary extravagant claims; and the agricultural press—to its credit be it said—usually treats the whole matter with skepticism in lieu of complete demonstrations.

These new and epoch-making varieties very frequently are grown, so the promoters say, from seeds that have lain dormant for years and years. It may be that a few grains of well-preserved wheat are found in the hand of an Egyptian mummy buried countless thousands of years ago; or that a few ears of corn are discovered in a cave once occupied by cliff-dwellers; or that a specimen of old-time barley is found safely preserved in the solidly frozen soil of Siberia some feet beneath the surface. In any case a few grains are planted, and the plants that grow put to shame our modern degenerate grains.

The seeds are carefully preserved and planted at the appropriate season; the crop is tended with the utmost care and the next harvest carefully garnered. This process continues until the discoverers accumulate enough seed that they feel it their duty to provide farmers with seed—at the remarkably low price of a dollar a pound.

And there is no case on record that any farmer has ever been unable to secure any supply desired at the price set. So runs the marvelous story.

How Long Will Seed Last?

What reliance can be placed in these new varieties that have been developed from seed that has lain dormant for long periods of time? The answer can be given with the greatest positiveness—absolutely none.

New varieties are developed, it is true, but not in this way. The reason is that the germ in the seed cannot retain its vitality more than a few years. The germ, though apparently dormant, must remain alive if it is ever to grow into a plant; and like all other living things it requires food, and water and oxygen. If the seed is supplied with any considerable amount of moisture, it either grows or rots; and if not, the vitality of the germ gradually but surely lessens, and after a few years it dies or becomes too feeble to grow into a plant.

The germ of corn at best retains vitality only about three or four years; the germ of wheat and barley lasts longer, but less than ten years. Very few seeds will grow after twenty years; and after fifty years have elapsed no seed can possibly produce a plant. At least, I have never seen records to the contrary. Whenever a claim is made that a new variety has been produced from seed hundreds of years old, this alone may be accepted as absolute proof of fraud. The promoters are merely selling ordinary grain at fancy prices to those easily parted from their money. When securing seed, get that which has been produced by the best known methods of breeding.



Tennessee, the State of this harvest scene, and many other Southern States are fitting soy beans into the rotation

THE WHITE WHIRLPOOL

By D. S. Burch, Associate Editor

3. Prosperity and Healthy Commercial Developments Follow the Law—Exploitation Precedes It

The first of this series of articles, beginning in the January 3d issue, compared the dairy industry to a business firm called Milk Producer & Co. The educator and dairy scientist, the first two members, have been dealt with and found to give incompetent service in several respects. They have been retained in the firm with the injunction to turn over a new leaf.

THE name "dairy inspector" frequently creates opposition. Various other sugar-coated terms, such as "dairy expert" and "dairy instructor," have been suggested and even used. These titles may correctly fit a person doing educational work, or anyone not connected with the enforcement of law, but for the man who comes to look around and see whether your dairy complies with the law, and gives orders or perhaps prosecutes, "inspector" is the most accurate word. We might as well call the devil by his real name.

The Score Card in Unskilled Hands is Dangerous

There are some good inspectors and many poor ones. The poor ones are no more popular with good inspectors than they are with you. Says C. J. Steffen, formerly a Wisconsin dairyman and now president of the International Association of Dairy and Milk Inspectors, "I have known carpenters, locksmiths, ward politicians, plumbers, and a cobbler to be appointed as dairy inspectors. How can the standards of milk production be elevated by inspectors whose knowledge of the dairy industry is less than that of the men whose business and premises they are appointed to inspect?"

The writer knows of a creamery inspector who, at the time of receiving his appointment, admitted that he had never been inside of a creamery, had never made a pound of butter, and couldn't tell a Pasteurizer from an agitator until he looked at the name plate.

Another would not introduce himself to the person whose farm he visited, but after looking around as a trespasser might do he would return to his office and mail the dairyman a long list of orders.

Absurd as such performances are, we have other absurdities almost as bad, though not so obvious, which are endorsed by educators, scientists, and others who ought to know better. One of these is the score-card system of inspection as it is sometimes used to-day. In the hands of representatives of the U. S. Department of Agriculture or milk dealers it is a good thing, for it is educational. But when used by officers of the law as a basis of standardizing dairies it is iniquitous. It compels a man to testify against himself before an inspector who is seeking defects rather than facts.

Many of the items can be determined only through information given by the farmer. The time of the year and the time of the day that a dairy is inspected also have a great influence on the score. If every inspector were thoroughly competent I should be heartily in favor of the score card, for he would see things as they existed below the surface. The chief real value of the score card to-day is as a guide for the inspector in showing him what to look for and in helping him to ask intelligent questions. It is sometimes effectively used by dealers as a basis for offering premiums for milk from nice-looking dairies, and I have used it for encouraging cream-station operators to "tidy up" their places of business. But when the average inspector makes out his score and carries it back to his chief, who then uses it as a basis for judging the quality of milk from that dairy, the whole thing ought to be condemned as boy's play.

Cultivate the Inspector's Friendship

But instead of condemning it, the Commission on Milk Standards appointed by the New York Milk Committee, and composed, in their own words, "of seventeen scientific men of prominence," not only endorse it as a means for determining grades of milk, but to give dignity to their endorsement they publish their official titles, which drag in the names of four prominent universities, two government bureaus, four state health departments, and other institutions of prominence.

Ivan C. Weld, formerly in charge of market-milk investigations for the Government and now chief dairy expert for a large milk company in Washington, D. C., cited to me the case of a dairy owned by a millionaire, and which, in his opinion, no inspector could score less than 90 on the government score card. Following a change in managers the milk from that dairy became so poor that it could not be used and had to be returned. Other dealers have had similar experiences with model dairies that shipped poorer milk than humbler dairies.

A dairyman in Wisconsin was prosecuted because of the insanitary condition of his dairy, although it had been scored 74, much higher than the average.

If a very large number were considered, the high-scoring dairies would be expected to, and actually do, produce the better grade of milk, but so many exceptions to this rule exist, that the score card will always fall short of telling the real truth in individual cases. An expert can accurately score milk and also score a dairy. But he will not undertake to use one score as the score of the other. Only a commission of scientists would do that. But the inspector is waiting for us to continue our inventory of his usefulness.

One useful thing he does we seldom see. He advertises our milk by creating confidence among the people he represents. The public likes to know its milk is inspected, and the greatest proof that it wants inspection is that it is willing to pay for it. The cost of reasonably efficient milk inspection for a city is usually from 3.5 to 5 cents per person annually.

The inspector is the personal representative of the consumer, and he has both a legal and a moral right to inspect any place where the consumer's food or drink is handled. If he is a gentleman, and he should be, treat him courteously, talk with him freely, and cultivate his friendship. If he is a competent man you can get much benefit from his experience. If he shows you that your dairy is not up to standard try to make it so. Do not find fault with him for giving you instructions, for he himself is under orders.

But if he seems to be incompetent or is rude, it is your privilege as a citizen to write the governor, if he is a state inspector, or the mayor, if he is a city inspector, asking for his removal and giving grounds for your complaint. Do not argue with the inspector. The best way to deal with him is through his superiors.

Put Inspectors Under Civil Service

Dairy inspection is a good thing, and the way to make it better is to put all inspectors under civil service. The government inspectors are all under civil service, and they represent a high standard of competence. Seattle, Washington, has adopted civil service for all its milk-inspection force.

Civil service requires certain personal qualifications as well as experience, and the ability to be personally congenial is an important asset in milk inspection. I

the minority, for his records are literally the law. He tells the producer, the dealer, and the common carrier what they can and cannot do. He assigns the scientist, the educator, and the inspector their duties.

Looking over the country we notice that wherever the laws relating to dairy products are numerous and fairly good the industry is most prosperous. This is because the laws deal chiefly with what is right and wrong. They also virtually guarantee that if a dairyman keeps within certain bounds he can extend his business without limit and he will be protected against dishonest competition. Some of the seemingly most harsh restrictions are the best. They are like tight fences which, though expensive to maintain and sometimes inconvenient, prevent untold damage to your property by trespassers. But the fence must be built right, for expert fence-climbers and underdoggers are at large in the country. In brief, we need the best laws made according to well-studied specifications. The legislator's chief offense is his slowness. In seven States the legislators have not done anything worth mentioning on dairy products. These States are Alabama, Arizona, Delaware, Mississippi, New Mexico, South Carolina, and West Virginia.

Oleo and "Filled" Ice Cream Not Under Control

But even in the best dairy States commercial conditions are still years ahead of the laws. Take the matter of oleomargarine. Only a few States have laws controlling it, and those laws are inadequate. The Bureau of Internal Revenue of the Government has done the only real efficient work to keep it within bounds. Take the matter of "fillers" and "binders" in ice cream. Gelatin and vegetable gums are now used to give "body" to ice cream as well as to improve the texture by preventing crystallization. Dairy schools teach the use of such "fillers," yet only one State, New Hampshire, up to last April has recognized ice cream containing a "filler" as legal and regulated the amount of filler.

Take the homogenizer, a machine that emulsifies butter and mixes it with sweet skim milk to form cream. Or you can even take powdered milk, water, and butter and with the homogenizer make "cream." Such cream is now sold both for direct consumption and in the form of ice cream. A creamery man in North Carolina expects to develop the business of supplying several Southern cities with that kind of cream.

The particular commercial value of the homogenizer is its ability to make an apparently fairly good cream out of a poor quality of butter. It introduces the temptation to use inferior products which would otherwise move slowly on the market. When cream is scarce, as in the winter months, homogenized cream would be a fair substitute. It can be made from unsalted storage butter in such amounts as are needed. Yet no state laws have yet appeared to regulate the use of this disturbing new element in the milk and cream markets.

Homogenized cream does not conform to the legal definition of cream, and should not be sold as such, but in spite of that "should not" it is nevertheless sold as cream right along now. When the legislators finally learn of the existence of the homogenizer they will consult the scientists and wait for the scientists to render an opinion; and if the future be like the past these opinions will be forthcoming about the time that a nice crop of millionaires, made rich by the homogenizer, begin to think of retiring from business.

Money Against Money

Were it not for the inspectors of the Bureau of Internal Revenue at Washington the country would be flooded with adulterated butter made from a mixture of butter and milk or butter and water. A ruling of that bureau requires that moisture in butter be less than sixteen per cent., and its inspectors are scouring the country in search of butter violating that rule. Good butter normally contains from eleven to fifteen per cent. of water. The sixteen-per-cent. standard has been assailed time and again by interests seeking to load their butter with water, but it is a good ruling and ought to be a law.

In comparing the activity of the Bureau of Internal Revenue and the average state legislature, remember that the bureau is after illegal products for the sake of the revenue—for the sake of the money, to be plainer—while the manufacturer of illegal products sells them for the same reason. It takes a diamond to cut a diamond. The average state legislator makes laws because he hopes he can please the folks at home. What do the home folks care about the homogenizer or the moisture in butter? And if by chance [CONTINUED ON PAGE 13]



"I'll not make these caps any smaller. What I need is better men. You're too small, sonny. Next!"

am strongly in favor of the right kind of milk inspection, and have never found anyone who was not.

And now we come to the legislator who makes the dairy laws. He may be considered the secretary of the firm Milk Producer & Co. He is the man who writes down what he believes to be the opinion of the majority of members. Naturally he is unpopular with

In brief, the dairy laws do not keep up with commercial development, thus causing the legitimate dairy business to suffer. Milk inspection is frequently antagonistic to the producer, a condition brought about largely by poor inspectors. Civil service is the most effective remedy.

I'll Put Your Stock in a Thriving Condition—

Make the Ailing Ones Healthy and Expel the Worms

GILBERT HESS,
Doctor of Veterinary Science
Doctor of Medicine



**U. S. Dispensatory
Medical Colleges
Noted Veterinarians**

All certify the ingredients of Dr. Hess Stock Tonic to do just what I claim for them.

Nux Vomica. Digestive and Nerve Tonic.
Quassia. Digestive Tonic and Worm Expeller.
Sulphate of Iron. Blood Builder and Worm Expeller.
Sulphate of Soda. Laxative and Liver Tonic.
Common Salt. Appetizer and Expels Worms.
Epsom Salts. Laxative.
Nitrate of Potash. Stimulates Kidneys.
Charcoal. Prevents Noxious Gases.
Fenugreek. Tonic and Aromatic.

The above is carefully compounded by Dr. Hess (M. D., D. V. S.), with just enough cereal meal to make a perfect mixture.

I URGE every farmer to see to it right now that his work horses are put in condition for the hard work of spring and summer, so that when the sun shines your horses will be rid of their old coats, full of stamina and ready for business.

And don't overlook the spring pig crop—the mortgage lifters. Start them off free from disease—free from worms.

Be sure, also, that your milk cows are thoroughly conditioned for the long, heavy milk-

ing season, and that those with calf are vigorous and fit.

Remember, your stock have been cooped up for the last few months and have been on dry feed. As corn or oats, hay and fodder do not contain the laxatives and tonics so abundantly supplied in grass, your stock are pretty apt to be out of fix. Some of your animals are liable to be constipated, rough in hair, their legs may have become stocked, or they have dropsical swellings, but the most common disease of all, especially among hogs, is worms—worms.

Dr. Hess Stock Tonic

A Splendid Conditioner—A Sure Worm Expeller

Being both a doctor of medicine and a doctor of veterinary science, I know exactly what farm stock need to get them in condition for spring.

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Poultry-Raising

How I Fed and Lost

By James B. Morman

AFTER several years of experience I have finally settled on a simple and economical method of feeding which gives good results in egg production and produces vigorous young birds. The method of feeding young chicks when they have reached the age of eight or ten weeks is as follows:

At about 5:30 in the morning they are given a little of a grain mixture composed of equal parts of cracked corn and wheat and about half the quantity of oats. About 7:30 the hens and chicks are given a hearty mash composed of eight parts, by measure, of bran, two of middlings, and one each of corn meal, meat meal, cracked corn, oats, and whole corn—the mash feed being thoroughly mixed dry and then moistened with sour milk, skim milk, or the wastes from the table. About one o'clock hens and chicks are given a half ration of cracked corn, wheat, and oat mixture, while for their evening meal the same grain mixture is fed except that the hens receive whole corn instead of cracked corn. As the chickens grow older the cracked corn is gradually replaced by whole corn, so that they are fed practically the same rations as the hens when they are six months of age.

Whole and Ground Grain Mash

This method of feeding, it will be noticed, makes use of only a few staple grains and mash-feeding stuffs. An unusual feature is that the so-called "mash" mixture is partly composed of grains. I have for several years used this composite mash and grain mixture for both fowls and growing stock with excellent results. Such a mash contains more air, is more substantial, and is better balanced than ordinary plain mash feeds. It is in my judgment less liable to produce a sour crop or other internal disorders with young stock. I have gone through a season without the loss of a single chick by this method of feeding, while during the past seven years the losses have never exceeded five per cent. of the total number of chicks hatched.

In addition to this system of feeding, the fowls are provided with a limited grass range, and meat meal and oyster shells are usually kept before the fowls all the time to insure a balanced ration. Both chicks and fowls are provided with plenty of fresh water, shade, and shelters from storms. This system of care and feeding has resulted in high egg production and the development of healthy, vigorous stock.

As an experiment, during May and June I changed this method of feeding with both old and young stock. Feeding too much corn in hot weather and insufficient quantities of other grain feeds and green stuffs are said to have had effects on the vitality of poultry. Overfeeding with corn is believed to decrease the proper activities of the liver, gizzard, and other internal organs. If continued any length of time without change such a system of feeding is said to derange the whole digestive system, which decreases the egg yield in fowls. In young and growing stock the effect of such feeding is to diminish their vitality, to intensify any inherent weakness, and to cause general debility which may result in death.

For the purpose of testing this theory I changed my regular method of feeding as follows:

In all the grain mixtures the quantity of corn was doubled, while the quantity of wheat and oats was decreased by about a third. The mash mixture was made up on the same general plan of increasing the amount of corn by cutting out the middlings almost entirely, doubling the amount of corn meal, and omitting the meat meal. This was a badly balanced ration. It involved the use of from one half to two thirds more corn than usual, and much more than the fowls or growing chickens could properly assimilate.

As might have been anticipated, the results were disastrous. The egg yield for the months of May and June was nearly twenty-five per cent. less than normal. The effect on the growing stock was not only lowered vitality, but the losses were increased about forty per cent. There were no losses among the laying fowls, though one rooster died from overfeeding with corn.

With the growing chickens the symptoms of trouble were plainly those of congestion and inflammation of the liver. In several cases inflammation of the liver resulted fatally, as the vitality of those chickens had been so diminished by this method of feeding that they were unable to stand the treatment of castor oil recommended in such cases. In less severe cases of inflammation and congestion of the liver the stronger chickens soon responded to proper care and feeding. All corn and corn meal were eliminated from the rations, the chickens were kept on a limited grass range and fed only sparingly, and all drinking water was supplied with about a teaspoonful of bicarbonate of soda to a quart of water. In a few days the chickens were greatly improved and soon recovered altogether. The chickens that died were those which were hatched with a weak constitution.

There are several important lessons which poultry-keepers may learn from this experience.

1. It is best to breed only from the most vigorous fowls in the flock in order to insure the hatching of chicks with as strong constitutions as possible.
2. Overfeeding with corn during hot weather is almost certain to produce some form of liver trouble with poultry, which, unless taken in time, is liable to result in diminished egg yield and a decrease in vitality of the growing stock.
3. That weak chickens are almost certain to die if overfed with corn when they are from six weeks to three months old.
4. That proper poultry-feeding is not such an easy matter to determine as so many persons seem to think.

Fattening and Broody Coop

THE illustration shows the form of a broody coop used by the Massachusetts Agricultural College. The framework is made of 2x1-inch strips, to which ordinary laths are nailed.



The ends are of 3/4-inch boards. By arranging a feeding trough in front, these broody coops may also be used for fattening coops.

The High-Dollar Hen

By B. F. W. Thorpe, Associate Editor

THE year 1913 was high-water mark in the laying-competition and poultry experimental work in America. Uncle Sam went to the head of the world egg-laying class with a long lead over all competitors.

The 200-egg hen has been the poultry slogan ever since the late Prof. Gilbert M. Gowell of the Maine Experiment Station did such important pioneer poultry-breeding work along bred-to-lay lines with Barred Rock stock. His persevering efforts are now known to have been in part misdirected labor. Nevertheless he set the ball rolling toward the high plane of egg production.

300-Egg Goal Reached

It remained for Prof. James Dryden of the Oregon Experiment Station to make the 300-egg hen an accomplished fact. He reached this enviable goal last autumn by making use of cross-breeding methods. His breeding experiments along this line have now been going on for six years, using a cross between the Barred Rock and White Leghorn as a foundation stock for his world-beaters. The station flock of this cross-bred strain, of which these star layers are members, now numbers about forty females. Professor Dryden's letter elsewhere printed gives some particulars in regard to his phenomenal accomplishment.

The laying competition conducted at the Missouri Poultry Experiment Station at Mountain Grove, Missouri, that at the Storrs Experiment Station, Connecticut, and several others more local in respect to territory represented have shown gratifying results in general in the increase of egg production; but nothing sensational has been brought into view in egg records in any of these contests.

The most important lesson in poultry-breeding brought into notice in both these leading laying competitions is the advance that English poultrymen have made over American breeders in producing hens that will uniformly lay a large number of eggs throughout the year. The pen of English White Leghorns in the Missouri competition were 189 eggs in the lead of the nearest competing pen in spite of one hen being out of condition and not laying for some time. Seven hens out of the ten competing in this English White Leghorn pen laid over two hundred eggs each.

John Bull Knows the Ropes

The Connecticut laying competition demonstrated the superiority of the English breeding methods even more forcibly. The English pen of White Leghorns that won first place in the laying competition at Storrs laid 1,190 eggs—161 more than the highest American competitor of any breed or strain. Furthermore, the second place in this competition was taken by another pen of English White Leghorns with 1,107 eggs—78 more than the foremost American competing pen. To cap the climax, the pen record standing next to the White Leghorns was a White Wyandotte pen which was the only other English pen in the Connecticut competition. This pen had 1,009 eggs to its credit—58 more than the highest American competitor in its class.

Stated differently, out of the four pens of five birds each in the Connecticut laying competition that laid more than one thousand eggs to the pen, the three pens brought from England took three out of four of the honors, competing among one hundred pens taking part in the competition.

This extraordinary performance of the English hen can mean nothing else than the fact that the English poultry-breeders have not sacrificed the egg-production quality or endowment to the frenzy for breeding for exhibition points. It is most fortunate that foreign poultrymen have been induced to enter these competitions to show us how we have let a craze for feather markings, carriage of tail, and comb requirements lose us the honors in these competitions.

The Laying Competition Analyzed

The second laying competition conducted by the Missouri Poultry Experiment Station and the Storrs Experiment Station, Connecticut, ended October 31, 1913, and November 30, 1913, respectively. During the year the six hundred hens in the Missouri competition laid approximately six thousand more eggs than the same number of hens laid during the year of the first competition. This increased number of eggs at a fair estimate would mean a revenue of about one hundred and twenty-five dollars more from the same number of hens.

Missouri has become one of the banner egg-producing States in America. The production is now approximately ten million dozen annually. When the hens of the "show you" State are made to increase the egg output ten eggs each, the revenue from the laying hens will aggregate about a million and a quarter dollars more than at present.

The Connecticut competition did not make so favorable a showing in the increase of the average number of eggs produced, but raised the number of high producers among the hens competing. This year the average production of all hens competing at the Missouri competition was 143 eggs. Last year the average production was 134 eggs. In the Connecticut competition the average

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Mrs. M. J. Clifton, Okla. Winner 1910



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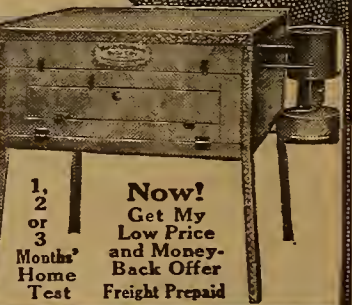
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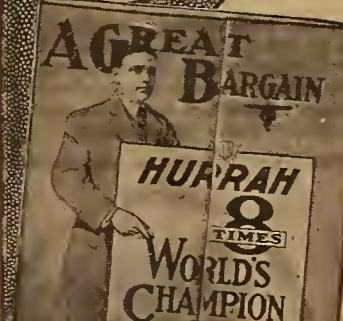
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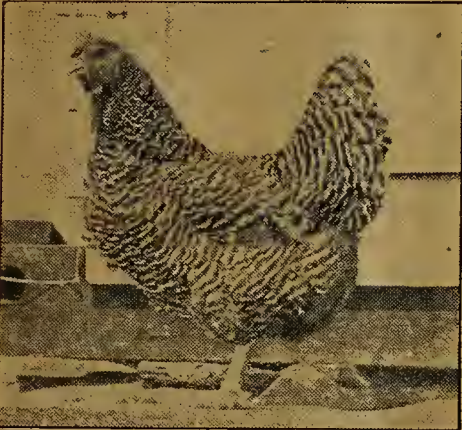
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was 156 eggs as compared with 143 last year. In the percentage of 200-egg hens the Connecticut competition finished the year with 67 hens in the 200-egg class or above two hundred, making thirteen per cent. of the competing hens. Last year the hens



Barred Rock that laid 61 eggs in 61 consecutive days, 1913, Connecticut Contest

finishing in the 200-egg class were only eight per cent. of the number competing. Over ten per cent. of the competing hens in the Missouri competition laid two hundred eggs or over last year. In the first competition the 200-eggers constituted nine per cent. of the hens competing.

The Quintet of Breeds

The hens in both these laying competitions were practically all representative of the five popular breeds, namely, Leghorns, Wyandottes, Plymouth Rocks, Rhode Island Reds, and Orpingtons. In the Missouri competition the Langshans were in numbers on a par with the R. I. Reds, and the Anconas and Minorcas each had a representation of thirty pullets in the competition.

These competitions are proving that the poultry-keeping public who are in the business for egg and market poultry have settled on these five breeds and the various subdivisions which comprise the classes according to color of feathers and form of comb.

The Distinguished Hens

The honor of first rank in production of eggs by an individual hen went to the laying competition in Connecticut in the last year's competition. The English White Leghorn, Baroness the Fourth, going one egg over the last year's production of Lady Show-Yon, which was 281 eggs.

In the Missouri competition the highest production dropped back to 260 eggs.

The rank of the greatest American egg-producers now stands as follows:

Eggs	Place	Date	Breed
251 Maine Ex. Sta.	1	1912	Barred Rock
255 Conn. laying comp.	2	1912	R. I. Red
257 Cornell Ex. Sta.	3	1911	W. Leghorn
259 Oregon Ex. Sta.	4	1911	Cross-bred
281 Missouri comp.	5	1912	White Rock
282 Ontario Agr. Col.	6	1913	W. Leghorn
282 Conn. competition	7	1913	Cross-bred
291 Oregon Ex. Sta.	8	1913	Cross-bred
303 Oregon Ex. Sta.	9	1913	Cross-bred

Laying of Breeds Compared

The statement of egg-production of different breeds and varieties given out by the directors of the laying competitions are more or less misleading unless the reader makes some computations for himself. The tendency is to get the impression that the Leghorns and Wyandottes are far and away in the lead in egg-laying qualities if the opinion is based on some of the extraordinary performances of these breeds, whereas if all the birds of all the varieties of the different breeds are brought into the computation, and if the production be averaged, the showing will cause some surprise.

The following table shows the average production of all the hens entered in both competitions—at the Missouri and Connecticut Experiment Stations:

Missouri—	Average Eggs per Hen			
	1912	1913	1912	1913
All Leghorns	140	138	120	148
All Wyandottes	85	137	120	150
All Rocks	130	122	120	132
All R. I. Reds	90	154	60	141
All Orpingtons	60	148	90	134



English White Leghorn Champions, Storrs Contest; 1190 eggs, 238 per hen

Connecticut—	Average Eggs per Hen			
	1912	1913	1912	1913
All Leghorns	175	160	235	168
All Wyandottes	70	154	75	152
All Rocks	90	155	65	142
All R. I. Reds	60	158	65	152
All Orpingtons	45	147	35	127

Italics represent the number of hens in the contest from which the average egg production was computed.

These averages emphasize the fact that the phenomenal layers among the Leghorns, Wyandottes, and other record performers make reputation for the breed that is not entirely fair. The small producers are kept out of sight. For example, some varieties, like one pen of Black Orpingtons in the 1913 contest at Connecticut, laid less than four hundred eggs, and two pens of Buff and Brown Leghorns barely over five hundred eggs to the pen. All of this variation in production among varieties and strains shows how some breeders have bred for fancy exhibition points at the expense of good laying quality.

Competition Hen Handlers Give Facts and Forecasts on Past and Present Experimental Work

No sensational records resulted from the second Missouri National Laying Contest held at the Missouri Poultry Experiment Station, Mountain Grove, Missouri, which closed November 16th. The six hundred hens in the contest averaged 143 eggs, an increase of ten per hen over the previous year's record and fully twice the production of average farm hens.

A rose-comb White Leghorn pullet from Maryville, Missouri, weighing only 2 3/4 pounds, was the winning individual, laying 260 eggs, or twelve times her weight, breaking the world's record for egg production by weight in proportion to body weight. The winning pen was ten White Leghorns from England, laying 2,073 eggs.

The third contest under way consists of one thousand pullets from twenty-five



These Rhode Island Reds laid 245 and 248 eggs in 1913, Storrs Contest

States, Canada, Vancouver Island, England, Germany, South Africa, Australia, and New Zealand.

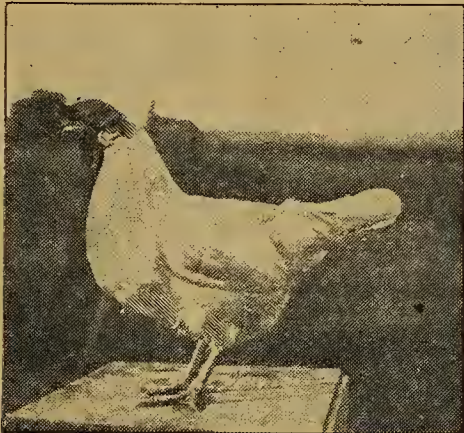
Our purposes in these contests are to awaken interest in breeding for utility qualities, to demonstrate the practicability and possibilities of improving various varieties by breeding and selection for egg production and constitutional vigor, and to show that egg production is more a matter of breeding, selection, feeding, and care than of variety. T. E. QUISENBERRY, Director State Poultry Experiment Station, Mountain Grove, Missouri.

The past year an egg record of 303 was secured at the Oregon Station. The hen began laying at six and a half months old, her eggs being above the average weight. The total weight of this hen's eggs was forty-two pounds. A month before she finished her year another hen finished with a record of 291 eggs. This hen began laying at five and a half months old. Her eggs were of good average size.

The hen that made the highest record weighs five pounds, the second four, and both are from an original cross of Barred Plymouth Rocks and White Leghorns, six

years ago. Each year hens with records of over 200-egg production and males from hens of similarly high records were used in breeding a pen of forty, among which were these two hens. This pen of forty hens averaged 210 eggs. Five sisters, including the best, averaged 247; the five best in the yard, 280. Twenty-six out of forty laid more than two hundred eggs.

Several other flocks bred on similar lines gave about equally satisfactory production. The same method of selection was followed with pure-breds as with crosses. In either case the results are very encouraging as to showing the effectiveness of individual



English White Leghorn, "Baroness IV," record 282 eggs, 1913, Storrs Contest, one egg more than White Rock, "Lady Show-Yon's" record, 1912, Missouri Contest

selection, and establish, I believe beyond question, the fact of transmission of egg-laying qualities. JAMES DRYDEN, In charge Poultry Husbandry Department, Experiment Station, Corvallis, Oregon.

In the second Laying Competition at Storrs, Connecticut, the best pen (five hens to the pen) record made was 1,190 eggs laid by White Leghorns. The best individual record was made by an English White Leghorn, Baroness the Fourth, her production of 282 eggs making her the champion of this egg-laying contest. The average individual production was 156 eggs.

The experiment station kept a full record of the number of eggs laid by each pen and each individual, amount of feed consumed by each hen, weight of eggs laid, duration and frequency of broody periods, and other important data. Sixty-seven hens laid two hundred eggs or more, representing White, Buff, Barred and Columbian Rocks, White Wyandottes, Rhode Island Reds, White and Buff Leghorns, White and Buff Orpingtons. Three hens—a Rock, a Leghorn, and an Orpington—laid no eggs.

There are 820 birds in the 1914 contest, from twelve States and two countries, including three pens of mongrels. Storrs Station supplies ten experimental pens—five pens of White Rocks and five of White Leghorns.

The chief experimental feature to be now ascertained by the experimental pens is the value of sour milk as a substitute for green food or beef scrap, or both. An immense amount of statistical data is being collected. Leghorns and Wyandottes have seen-sawed for first place; the latter now is leading. This experiment station will soon issue complete bulletin.

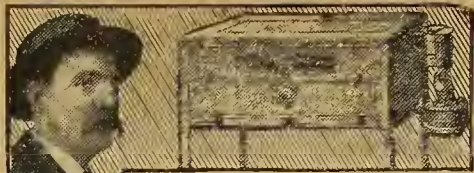
WM. F. KIRKPATRICK, In charge Laying Competition, Storrs Experiment Station, Connecticut.

"Eggs is Eggs"

THERE is coming to be an egg crisis in December of every year. The city people get excited about the price of eggs. They blame the cold-storage people, and the grocers, and the hens, and everybody else—except themselves. Last winter the cold-storage people in some cities, having good store of eggs, skillfully worked up a "co-operative" movement among the city consumers, and worked off a great many of their eggs independently of the grocers. This year the egg panic took the form of a boycott on eggs. People raised a slogan against the use of eggs until the price went down. About that time the pullets began to lay—and the price went down.

As a matter of fact, the city people are themselves to blame for the high price of eggs. The "New York Times Annalist" shows that clearly. They have grown fond of eggs and eat more of them than formerly. The population of seven great cities of the United States has increased 30.9 per cent. in ten years, but their consumption of eggs has increased 73 per cent. It is stated that the city person who ate four eggs a dozen years ago now eats five. So eggs have risen in price faster than anything else.

If the cities are eating nearly twice as many eggs as formerly, and we are producing only a fifth more, clearly the country people are going without eggs so as to sell them to the cities. What more can we do? It may well be said that we might keep more hens. Well, that isn't a bad idea, and we commend it to all farmers who can see their way to increasing their flocks. And if the flocks now kept were all cared for as they should be, and placed under the command of cockerels hatched from the eggs of hens with records as first-class layers, that would go far toward filling the aching void in egg production.



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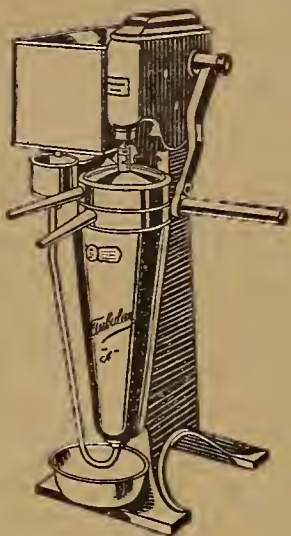
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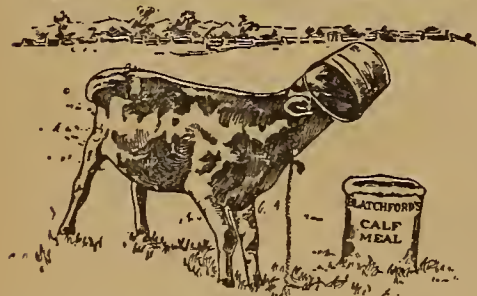
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Live Stock and Dairy

Hog Houses of Rails and Straw

By E. P. Gregory

WHEN you have several different sizes of hogs together, you may want to separate them into more lots than there are hog houses. Perhaps you will need an extra house for a few days only, until the fat hogs are killed and marketed.

You can make a perfectly comfortable house for this purpose at a cost of nothing in money (if you have some rails), and about two hours' work.

Build a house as large as you need, of rails or poles, making the walls double, with a space of twelve to fourteen inches, or more if you prefer, between the walls. Pack this space full of straw, hay, or some such material, then cover it with rails or poles and build a miniature haystack on top. Of course you must use plenty of bedding, since there is nothing but a dirt floor in this house.

But it will answer the purpose, and when the fat hogs are out of the way so that you can use one of the good houses, simply haul your hay in and stack up the rails or poles so they may be ready for the next job.

Canadian Cattle

SOME of our readers were inclined to criticize us when we failed to see anything bad in reciprocity with Canada. We mentioned the Canadian supply of stockers and feeders as likely to be valuable to us. The favor with which these cattle are being received in the Corn Belt, now that the Underwood Bill lets them in, seems to confirm our judgment. A Chicago live-stock paper says:

Few Canadian cattle reaching American markets are fit for beef. Alberta is furnishing practically all of them. Ontario stuff is thin to the point of emaciation and fit only for finishing purposes, but it is selling well. A local dealer sold a string of Ontario stockers weighing 650 pounds to Quinn Bros. of Princeton, Illinois, at \$7.35 yesterday, and a lot of Canadian stuff is going to the Corn Belt at \$7@7.25 to figure in the beef supply of 1914. Another train of the Burus & Duggan cattle from Alberta is due to reach Chicago next Monday, but that will probably be the last of the season from that quarter.

Canada has oceans of good grass, and practically no corn. We have oceans of corn and a scarcity of pasture. If this doesn't make a profitable trade in live stock possible for both sides, we are greatly mistaken.

Purity as a Preservative

IN A FEW favored localities, notably in high altitudes, perishable food products keep a surprisingly long time. This is due to the greater purity of the air as regards freedom from bacteria, molds, and similar growths which cause fermentation and decay.

In sparsely settled parts of the Black Hills of South Dakota, for example, meat and milk can be left out of doors for a long time before they will spoil.

Some certified-milk dairies fill the stable with steam a short time before milking. This clears the air of dust. Mr. J. A. Spears of Clinton County, Ohio, through very careful methods, managed to produce milk that kept sweet for seventeen days without the use of ice and, of course, without the use of preservatives. Mr. Spears nearly overdid the matter, for one of his customers who desired sour milk had difficulty in making it sour. She had been accustomed to milk that would sour overnight, and Mr. Spears's milk did not. She took him to task for using preservatives, and was greatly surprised when she learned that if milk was pure and was kept in a pure place it would stay sweet for more than one day.

The consumer ought to know more about these things that are so well known to producers.

Troughs for Sheep and Lambs

By W. H. Scott

FOR the trough shown in Fig. 1, take for the bottom 2-inch material, 10 inches wide. For the sides use 1-inch wood, 6 inches wide, and for ends use 2-inch material. Make legs of 2x4. Bevel off upper ends of legs so they will have good slope. Put outer legs close to end of trough, which will prevent too many sheep from crowding against the end.



Fig. 1. Trough for mature sheep

Now nail a strip of board vertically to the center of each end of the trough, so it

will extend 16 inches above trough. Upon this nail a 4-inch strip the length of the trough. This will keep the sheep out and also prevent them from jumping over. Never use a V-shaped trough for old sheep, as they bolt their feed.

To Prevent Grubs in Sheep

Make the V-shaped trough (Fig. 2) of material 6 inches wide for sides (T), with ends (F) large enough so trough cannot be tipped over. Bore holes in the end pieces and place in them an old binder roller or straight round stick so arranged that it will turn easily.

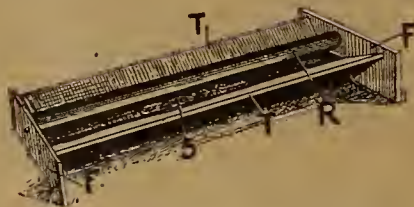


Fig. 2. Grub-preventing salt trough

Cover roller with a piece of gunny sack tacked securely. Adjust the roller so that the sheep's nose will touch it when the sheep is licking the salt (S) out of the trough, and then nail ends securely. Keep the roller well coated with pine tar, and that will do the work.

Covered Trough for Lambs

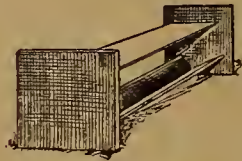


Fig. 3. For lambs

not only prevents lambs from getting into the trough, but keeps a large amount of rain water and trash out of it.

Know-How Wins

THERE is a right and a wrong way even in the matter of eating grass.

On the national forest sheep ranges two bands of lambs of equal weight, breeding, and general conditions were handled as follows: One band was herded in the usual way, the herder letting the lambs choose largely where they should pasture on the range. The other band was herded on portions of the range where the various grasses and herbage were developed to just the right stage of growth. The latter plan of handling the lambs resulted in a saving of feed from trampling and close cropping where the feed was the most toothsome.

The result was that the lambs made to feed when and where the herder desired weighed an average of five pounds each more at the end of the season than those allowed to range at will. On a flock of four thousand or five thousand lambs the gain from scientific handling of the lambs would be over one thousand dollars for the season.

Relief for Heaves

By Dr. A. S. Alexander

I HAVE been asked many times to give a cure for heaves, and am sorry to say that heaves are incurable. The distress may be relieved by the following treatment: In summer pasture the horse and feed oats and bran in addition. In winter feed wet oat straw in preference to hay. Do not feed any bulky feed at noon. Keep the bowels active. Wet all feed. Give half an ounce of Fowler's solution of arsenic night and morning until a quart has been used; then gradually discontinue the medicine, taking a week or more to the work. It may be started again any time the symptoms become aggravated.

There are many commercial cures for heaves, but they only give relief. The disease starts again as soon as the horse is fed much bulky feed and made to work on a full stomach.

Molasses in the Ration

By David Buffum

AN OHIO reader writes me as follows concerning his horse: "I have a horse that is in very poor condition. He is thin and has a very rough coat. All the work he does is to travel about ten miles a week. I feed him corn and cob meal and corn fodder. His breath is very bad at times, and he refuses to allow his teeth to be fixed."

"I have another horse, fed on exactly the same feed, that is in good condition."

The best thing for such a case is molasses. Take two quarts of bran and one quart of corn meal (not corn and cob meal); to this add a teacupful of molasses and each day increase it up to a pint, or even a quart. Feed this three times a day. The horse must also have dry forage; this is an absolute necessity, so, if he will not eat corn fodder, procure some good hay for him and feed him, according to his size, from twelve to twenty-five pounds a day. On these rations he will very likely greatly improve in condition.

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The Market Place

Build Up the Trade

By J. P. Ross



"Parcel post should open up a market for mutton and lamb"

ALTHOUGH receipts at most of the principal Western markets have been unusually large for the time of year, there has been no difficulty found in disposing of about everything offered, and where handy weights and good finish were found, competition on the part of buyers has at times been almost feverish. Excessive

weights and want of finish met a less hearty welcome. The tendency of prices early in the month, especially for prime wethers, was clearly upward; in fact, both for these and for high-class lambs they have been higher than at any period since last June.

With regard to wool, though there has been somewhat of a lull in the trade, and for some classes of wool a slight decline, this has rarely exceeded ten per cent.—perhaps two cents per pound—and expert opinion seems, as a rule, to regard the prospects of the trade as very encouraging. With reference to the probable effect of the change of our tariff policy, in which British authorities on wool are taking much interest, the general opinion seems to be that the immense increase in the demand for both fine and coarse wools, the rapid increase of population as compared with that of sheep, the vast area of land available for sheep culture which we possess, and our admitted talent for making use of our natural advantages will in the end lead us to greater efforts and greater successes in sheep culture.

There are no apparent reasons why parcel post should not open up a new and very profitable market for mutton and lamb as it is already doing for eggs, butter, poultry, and other produce of the farm.

The better class of hotels and restaurants and many private families in towns and cities would gladly avail themselves of a chance to obtain in some cases whole carcasses of nicely prepared spring lamb, and in others the choicer joints of mutton direct from the farm. By hunting up customers and making contracts with them to supply them with what they desired in these lines, a way would be opened up by which the farmer could obtain far better prices for his lambs, and in some cases for his mature sheep, than he can by sending them to market on the hoof; and at the same time he could well afford to sell at much lower prices than consumers have of late had to pay.

To the man who could build up a trade in a distant city, parcel post offers the needed means of transportation; but where the farm is within easy reach of any good-sized community personal delivery on stated days might easily be managed.

To insure success in this method of marketing it is necessary that the killing, and the preparing of the carcass, should be skillfully and carefully performed. In **FARM AND FIRESIDE** of January 3d of this year is an article (page 8) by Mr. J. S. Underwood which deals very practically and thoroughly with this matter. His directions are so plainly given that anyone who will carefully study and then follow them can find no difficulty in preparing a lamb or a sheep for market in as good shape as any professed butcher. Since the legs, loin, and ribs are the choice cuts, they would probably be the parts most in demand; the less expensive parts are just as good and nourishing, and, when properly cooked, can be made very tempting for home consumption. Much, too, depends on the packing.

THE Sixth National Corn Exposition will be held at Dallas, Texas, February 10th to 24th, 1914, under the direction of the National Corn Association in co-operation with local commercial bodies. Fifty thousand dollars will be distributed in the form of premiums for corn and other exhibits.

Nine-Dollar Hogs in March

By L. K. Brown

ONE can hardly help but take an optimistic view of the hog market. The low spot of the winter was hit the fore part of December, and prices have persistently advanced since then, advancing seventy-five cents in the first month—faster than was generally expected. There are many substantial reasons for this healthy market. While receipts have been large numerically, the actual weight marketed is much less because of the large percentage of 150-pound shoters. On the demand side of the market there have been shipping orders

which have sometimes taken as high as one third the offering; there has been an enormous consumption of fresh pork; and the exports of ham, bacon, and lard have been about twenty per cent. greater than during the same period one year ago. With this wide outlet and this being the regular season for the killers to stock up, the market cannot help but advance, and nine-dollar hogs are predicted for March.

The bulk of receipts have continued to be the 150 to 200 pound shoters, showing that feeders are anxious to cash in their hogs and are selling as fast as hogs get into marketable shape. The advancing prices and prospects for still higher prices may stimulate feeding, for there is a good profit in feeding now. The prime heavy shipping hogs have commanded the top quotation for some time, but the light hogs are in strong demand to take care of the fresh-meat trade. These little fellows cut up to a large profit to the killers, so they have been willing to buy as many as are in sight. As the winter progresses these shoters are gradually getting heavier and are expected to disappear presently.

The outlook for the feeder is bright, for corn fed to hogs now should bring eighty cents to one dollar a bushel when they are marketed in March or April.

Figures Tell a Story

By D. E. Mowry

MANY home-seekers and farmers do not give enough attention to figures. In past years many of us in this country, especially in Iowa, have sold out and rushed to the Canadian west to raise wheat. It should be borne in mind that in the Canadian wheat region the local markets do not offer the Winnipeg price for wheat. The railroad freight charges, the commissions of dealers, and other expenses incident to the marketing must come out of the Winnipeg price. The Winnipeg price shows only what the wheat is worth when it reaches Winnipeg, with transportation, commissions, and all expenses paid, and even at Winnipeg the crop is far from its consuming market.

The result is that a bushel of wheat at a local market in the Canadian west is worth about the same as a bushel of potatoes in northern Wisconsin. Now just imagine how these facts, reduced to figures, would look on a blackboard.

Imagine yourself rushing to Canada to raise twenty bushels of wheat per acre at sixty cents a bushel, or less in some instances, in preference to raising two hundred bushels per acre of potatoes in northern Wisconsin and getting the same price per bushel for them.

Yet northern Wisconsin does not run specially to potato production because there are so many other things which pay as well or better.

Figures count, that's the point.

City Markets While You Wait

YES. While you wait. Did you ever ask yourself why some of the modern movements, which obviously so beneficial to all, move so slowly? Take the question of public markets. Some cities have had them for years. Why are they lacking in other cities? and why is the farmer denied the privilege afforded by them?

G. H. Gledhill is secretary of the Market Protective Association of Pittsburgh, Pennsylvania. He is a middleman and has been in the fish business for years. He likes the idea of a central public market in Pittsburgh, and explains the slowness of the establishment of such a market as follows:

"The chief obstacle in the path of any movement, though obviously beneficial, is the inertia of the people. They fear graft. They would rather continue to pay high prices for groceries than to trust the city officials to put up a central market. They would rather lose money themselves than encourage a movement if there was any possibility that another person would make money."

The Pittsburgh Market Protective Association, of which Mr. Gledhill is the secretary, was formed simply for the purpose of establishing business acquaintances.

Men will not trust each other until they know each other and learn to judge to what extent confidence may be placed. Getting acquainted therefore always helps business, because business is based on mutual confidence. After acquaintance becomes friendship, plans and ideas for improvement of the common lot naturally follow, and then we have an organization. When the organization becomes strong enough and important enough to gain the general confidence of people, a movement for public welfare by such an organization becomes possible, and if the organization is active it may become a reality.

And so we wait for these things to happen. First there must be the desire to know one's fellow men and workers. Then comes acquaintanceship, next friendship, next confidence, next plans and ideas, then organization, and finally, if everything goes well, general improvement. And while all these things are taking place the public welfare waits.

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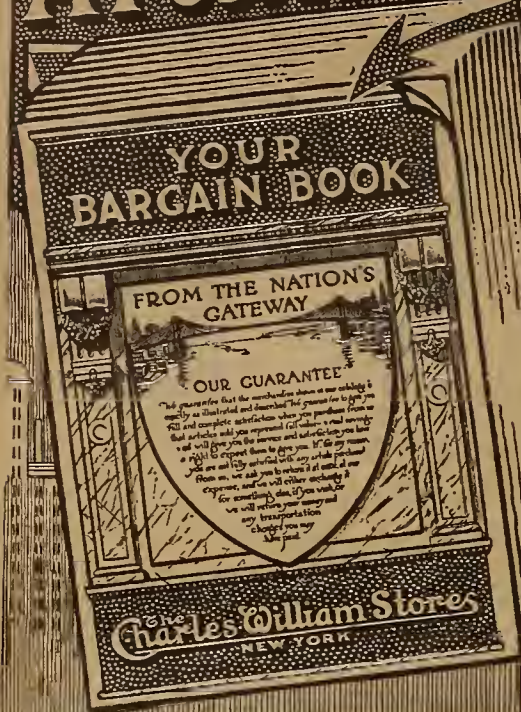
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Farm Notes

The Fable of the Retired Farmer

By Fred Telford

ONCE there lived a Farmer who worked so hard he was too tired to go to Church on Sunday. His Hired Men refused to stand for the first and last Call to Sowbelly at 3:45 A. M. and left before the End of the Week. His Wife milked the Cows and hoed the Garden because Help was so hard to keep. The Farmer voted against Hard Roads, and when he was elected to the School Board hired for Teacher a Young Girl just out of High School, because she would take the Job for Thirty Dollars a Month. In short, he squeezed the Dollars so hard the Eagle screamed. He would steal Acorns from a Blind Pig.

When the Farmer was fifty he had a Half Section of good Black Land in the Corn Belt and Money in the Bank. He moved to Towu to enjoy a hard-earned Rest. But his Stomach was so tired of Corn Bread and Bacon that it went on a Strike, and the Farmer ate Milk Toast. He could predict a Storm before the first Cloud appeared, by the Creaking of his Joints, and he had to call for Help to turn over in Bed. One Day his Doctor said he had made enough Money to buy a new Touring Car, and the Farmer died of Heart Disease.

Moral: It's a Losing Proposition to make a Human Barometer of Yourself.

A Decalogue of Don'ts

By W. F. Wilcox

HERE are some scenes I don't like to see on the farm. Do you? Have you ever seen them? Has anyone ever witnessed them on your farm?

The wife out at the woodpile chopping wood or, out where the woodpile ought to be, picking up chips.

A pack of ravenous dogs yelping about, encroaching upon the rights and happiness of underfed and half-clothed children.

Big piles of manure leaching away their fertility back of the stable.

Patches of weeds and foul fence corners.

A cowless farm where milk, butter, and their assistance in cooking are absent.

An empty pigsty with waste enough on the place to fatten at least one pig.

A gardenless farm with its inhabitants going without the healthful diet of fresh vegetables so easily produced on any farm.

A farm whose silences in early morn are unbroken by hearty chanticleer calls.

Blue vapor issuing from the barns, yards, or fields as a result of men's uncurbed tempers while dealing with live stock.

A farmhouse unadorned with the beauties and fragrance of some flowers at the door.

What is Right?

AN OREGON reader writes in, saying "that belief in the water witch is not a popular error, that there are 'plenty of people who can and have located water under the surface of the earth.'" And he encloses this newspaper item:

Halle, Germany, Sept. 22.—The congress of scientists for the purpose of testing the efficacy of the divining rod in discovering underground springs of water and mineral deposits has decided to organize an international association. Tests conducted under the supervision of the congress by divining-rod experts resulted in the location of three potash veins the existence of which was confirmed by mine maps, of coal deposits, and of water courses. One expert found a leak in the city water main.

The congress received authenticated reports that southwest African farmers are finding water regularly by means of the divining rod. The congress adjourned today. All along the line, scientific research is progressing that verifies the claims of spiritual phenomena. Dowsing, or searching for hidden water, ore, by means of a divining rod (a Y-shaped twig from a tree) is now receiving careful attention. A dowsing rod in the hands of a suitable medium will discover water and minerals. —New York World.

Sulphur as Manure

WE HAVE had some articles in this paper with reference to the needs of the soil in the matter of sulphur. Our ancestors used land plaster on their fields—ground gypsum—and got much temporary benefit. This plaster contains sulphur in combination with calcium, but the old chemistry taught us that the sulphur did no good as a fertilizer, but was useful only as a stimulant, and finally resulted in depletion of the soil. Hart and Peterson of Wisconsin published a bulletin a year or two ago which seemed to prove that the

old chemists were mistaken about sulphur, and that plants really need much more of this element than we used to think. They showed also that Wisconsin soils after forty or fifty years of farming have lost nearly or quite half the original amount of sulphur in the soil. The average mind is inclined to the belief that if farming makes the soil poor in sulphur it must have gone away in the crops.

The Wisconsin figures show that plants carry away in sulphur almost exactly three times as much as the old chemists thought.

A bulletin by Dr. O. M. Shedd has been published on this disturbing matter. It shows that Kentucky soils, when not fertilized, lose sulphur by cultivation, and that the supply is only about the same as the supply of phosphorus. Moreover, sulphur is carried away in the drainage water much faster than is phosphorus, and the supply falling in rain and snow is less than that which runs off. "The facts in the foregoing being the case," says Doctor Shedd, "it is evident that any system of permanent soil fertility, without the addition of sulphur in some form or other, will doubtless prove a failure in maintaining the sulphur content of the soil."

This is especially important in view of the fact that the Illinois Station has worked out a system of permanent soil fertility with rock phosphate floats as a basis, and, we believe, with no provision for any outside supply of sulphur save that from the rains and snows.

Sulphur may be applied in the form of barnyard manure, land plaster (ground gypsum), potassium sulphate, ammonia sulphate, or the ordinary acid phosphate, which contains sulphur.

The point has now been reached when all the soil chemists must take notice of the fact that the work of the past has been defective because they have not regarded sulphur. Their experiments in which acid phosphates have been used in the belief that it supplied no fertilizer except phosphorus must be worked over, for all their results are now in doubt.

This is very disturbing to farmers who have been studying the matter, and to the chemists. It seems to require a complete reexamination of the land-plaster data, and also of the old experiments in the application of phosphorus.

Oil! Oil! Oil!

By Guy Swan

COMMON machine oil is one fourth the price of paint and much easier to apply. Try oiling the ends of your whiffletrees and see how snug and tight the clips will fit and how well the wood is preserved. Oil the holes in wooden whiffletrees. Oil the eye of the hammer handle. Oil the ax handle where the strain comes. Oil the buggy fellos. In short, oil any wood which you wish to keep from shrinking and swelling with the weather.

The White Farm

By B. H. Pratt

DOWN in the prairie country of southern Minnesota there is one locality where, as far as you can see, are groves of trees, each one sheltering a group of farm buildings. Most of the farms are eighty and one hundred and sixty acres, with once in a while a larger one.

There is one grove which you single out when three or four miles away and, as you get closer, you say to yourself, "Well, now, if that isn't just the nicest-looking farm I've seen in many a day," and the only reason you notice it is because every building from the silo to the corner crib is pure white.

I asked the owner if it was not extravagant to paint the barns, sheds, etc., white instead of the traditional red, and he said the first cost was about the same, and he believed that in the long run the white would be cheaper because it would wear better, being a much better grade of paint.

He bought the best grade of white lead and oil and mixed them himself, and only hired a painter for the high work, and he said it was his ladders he wanted the most.

I noticed every shed and corner crib, even those of rough lumber, were white, so I asked if the paint didn't cost a great deal for that work, and he said: "I used what is called government whitewash for those, and it seems to be wearing well. It's a nuisance to make, but those sheds look a hundred per cent. better than before. I also used the government whitewash for the stonework, putting in a little lampblack to make it a light gray."

He had a basement barn, chicken house, and milk house with the stonework showing above ground from two to five or six feet, and it was all a beautiful light gray that went exceedingly well with the white buildings.

The buildings are only average farm buildings, not better than those of the neighbors, not so good as many, and yet the farm looks better both at a distance and upon close inspection.

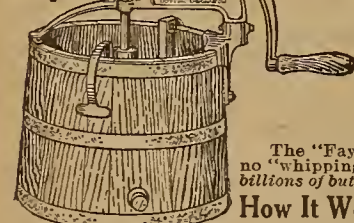
Do most of us realize the value a little paint adds to our farms?

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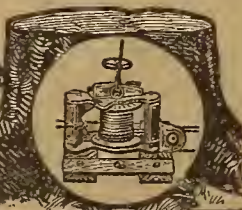
Write for Free "Fayway" Book and Prospectus of Course in Butter Making. Or better still, send the \$1.00 deposit TODAY and get the machine itself. It is the greatest invention since the cream separator was brought out. Free Prospectus tells all about Fayway Butter Clubs and the Fayway Course.

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ANOTHER COFFEE WRECK

What's the Use When There's an Easy Way Out.

Along with the coffee habit has grown the prevalent "American Disease"—nervous prostration.

The following letter shows the way out of the trouble:

"Five years ago I was a great coffee drinker and from its use I became so nervous I could scarcely sleep at all nights. My condition grew worse and worse until finally the physician I consulted declared my troubles were due to coffee.

"But being so wedded to the beverage I did not see how I could do without it, especially at breakfast, as that meal seemed incomplete without coffee.

"On a visit, my friends deprived me of coffee to prove that it was harmful. At the end of about eight days I was less nervous but the craving for coffee was intense, so I went back to the old habit as soon as I got home and the old sleepless nights came near making a wreck of me.

"I heard of Postum and decided to try it. I did not like it at first, because, as I afterwards discovered, it was not made properly. I found, however, that when made after directions on the package, it was delicious.

"It had a soothing effect on my nerves and none of the bad effects that coffee had, so I bade farewell to coffee and have used only Postum since. The most wonderful account of the benefit to be derived from Postum could not exceed my own experience."

Name given by Postum Co., Battle Creek, Mich. Write for a copy of "The Road to Wellville."

Postum now comes in two forms:
Regular Postum—must be well boiled.
Instant Postum—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water and with cream and sugar, makes a delicious beverage instantly. Grocers sell both kinds.

"There's a Reason" for Postum.

Unfinished Business

By Clifford E. Davis

FARMING is always a business, but the average farmer keeps no books. He pays a bill, makes no record of it, loses the receipt, or keeps it in one of a dozen cluttered boxes where it cannot be found.

In order to protect themselves in case of sudden death the wife and children should be made familiar with every detail of the business. There is recorded the case of a rich man who deposited his money in several banks, was killed in an accident, and his family are living in absolute want because they cannot ascertain where the money was banked. Another instance is that of a man who placed thirty thousand dollars in a bank for the assistance of his family, died far away, and his folks cannot find where the money is placed. One of my most valued books is a large blank book in which I record every detail of farm work with date of day, month, and year. If we begin to plant or sow a piece of ground I put down date, how much seed it took, cost, kind of fertilizer used, name of variety, etc. If a debt is paid, down goes the date, amount paid, what for, and if I got a receipt.

By making the entries each noon or night the books can be so kept up to date that an executor can look over the record, stock and produce books, etc., and see in a few moments how affairs stand; and the farmer himself always knows about his work.

The White Whirlpool

[CONTINUED FROM PAGE 6]

dairy legislation is demanded he will take some subject of popular interest like reimbursing breeders for cattle that have been allowed to become tubercular. Anything along the line of carefully made, painstakingly robber-proof laws he either lets alone or gets the scientist to write for him. These are some of the reasons why our laws are not better than they are.

If all the work of reinforcing legal dairy standards could be put in hands where the interest of the public will be pushed as hard as individual interests, the dairy business would have a more solid foundation under it.

The Milk Dealer Knows His Business, and Yours Too

Most producers—and consumers too—think the milk dealer controls a big percentage of the preferred stock in the firm Milk Producer & Co. By milk dealer we refer to the man who buys the milk from the farmer and sells it to the consumer. In a broader sense, he may also be a condenser who cans your milk, or a creamery man or ice-cream maker who uses only the cream. But in any case he is the man who gives you just so much for your milk or cream or butterfat, and if the returns are low you feel that he is getting too much, and you have enough to do in supporting yourself and family without supporting the dealer in sumptuous style. He certainly gives the impression of being well clothed and well fed.

The milk dealer is nevertheless the first of the firm thus far considered that really understands the milk business. He is also the first to put his own money into it. He is a business man and takes pains to know the condition his business is in. He is also aware of the strong and weak places of the law better than any of us—even better than the legislator. He knows each of his partners, and can get along with all of them better than any other two can get along with each other.

The milk dealer likes to keep things in a state of harmony. He dislikes to see the producer or consumer become strongly organized. He tries to keep the good will of the producer by paying him at least as much as his competitors pay. He very effectively keeps the good will of the consumer and molders of public sentiment by advertising in the daily press and by constant activity in behalf of purer milk; both very commendable methods. When he has an up-to-date plant he solicits inspection and he makes himself agreeable to his visitors. We can all take lessons from the milk dealer in business and diplomatic relations with our fellow men.

H. P. Hood & Sons, prominent milk dealers in Boston, Massachusetts, entertain during about eight months of the year one hundred or more people weekly. They furnish a special car to bring the guests, show them how milk is handled, and give them a talk on the food value of milk and other topics. This is followed by a luncheon.

Through the courtesy of Mr. C. H. Hood we here present an itemized analysis of the expense of operating the Hood plant. To furnish a setting for these figures the following outline is given of Boston's milk supply.

Boston receives milk from seventy-five hundred dairies, located in all of the New England States except Rhode Island. The territory supplying Boston with milk extends as far as eastern New York, two hundred and sixty miles into Maine; and some cream is secured from Canada. The transportation facilities are good, and most of the milk is hauled in special milk cars.

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If you are a user of Diamond Tires, now is the time to buy.

If you have never used Diamond Vitalized Rubber Tires, insist on them now and take advantage of these reduced prices.

Size	Smooth Tread Prices	Squeegee Tread Prices	Size	Smooth Tread Prices	Squeegee Tread Prices
30x3	\$11.70	\$12.65	34x4½	\$33.00	\$35.00
30x3½	15.75	17.00	35x4½	34.00	36.05
32x3½	16.75	18.10	36x4½	35.00	37.10
33x4	23.55	25.25	37x5	41.95	44.45
34x4	24.35	26.05	38x5½	54.00	57.30

Your dealer will supply you

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FIELD SEEDS 25% Saving on Our Direct from "Grower to Planter" Plan. Get

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ONION, Prize-taker, weight 8 lbs., 1000 bus. per acre.
PARSLEY, Triple Curled, best, most ornamental.
PARSNIP, Improved Cusumey, smooth, sweet.
PEPPER, Crimson King, early, large, sure.
RADISH, White Icicle, best, early, long, tender.
TOMATO, Earliana, best, extra early, smooth.
TURNUP, Sweet Corman, large, sweet, keeps.
ASTERS, Show mixed.
ALYSSUM, Little Gem.
GOSMOS, Early Giant.
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Catalog and 10c check free.

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20 packets Grand Large Flowering Sweet Pens, 10 cts.

CLOVER \$5.00 Per Bu.

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of people you know raise Flowers and We Will Send You a Lot of SEEDS

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The average milk which is shipped to Boston is one and one-half days old when delivered to the consumer, and the temperature is below fifty degrees Fahrenheit.

Mayor Fitzgerald of Boston holds Doctor Muldowney of the Board of Health responsible for the quantity and the quality of milk. Boston has been threatened with milk strikes for several years, and did have one serious milk strike of six weeks' duration which accomplished nothing visible except to make a breach between producers and dealers.

No one dealer in Boston has enough business to control the milk situation. The Hood plant is one of the largest. The approximate costs of handling milk from the railroad station in the country to the customers in the city are as follows:

Country Expenses—	Per Quart Totals
Transportation, labor, ice, cans, can-washing, and miscellaneous items . . . . .	.0102 .0102
City Expenses—	
Pasteurizing, washing and bottling, glass jars, etc. . . . .	.0103
Salaries of drivers, helpers, foremen, and salesmen . . . . .	.0127
Team expense, including horses, wagon, and harnesses . . . . .	.0070
Miscellaneous, including book-keeping, stationery, advertising, car fares, telephone calls, and bad debts . . . . .	.0038
Total city expenses . . . . .	.0338
Total expenses, city and country . . . . .	.0440
To this must be added shrinkage and loss in carrying surplus . . . . .	.0037
Grand total . . . . .	.0477
The average price paid in the country, middle zone, from October 1, 1911, to October 1, 1912, was per quart . . . . .	.0390
Net cost per quart, delivered to customer, family trade . . . . .	.0867

Milk sells for 9 cents a quart, leaving a balance of .0033, or a third of a cent profit.

Mr. Hood continues: "Quite a portion of our milk to family trade is delivered in pint jars. Every single pint of milk we sell is delivered at a net loss, for while we get a trifle extra for pints it costs as much to deliver pints as quarts, and we do not get enough to cover this added expense.

"Our expense last year for glassware was over forty thousand dollars. The permanent investment required to handle the milk business under modern requirements is very heavy. We have invested in our city plants about four hundred thousand dollars; in our country plants over one hundred and sixty-five thousand dollars.

"The loss on surplus milk would be much reduced and, in fact, entirely eliminated, were it possible for us to buy the same quantity of milk that we sell. But to cite extreme cases: In the month of March, 1911, we were able to dispose of but 61½ per cent. of the milk we bought, leaving 38½ per cent. to be worked up into butter and casein, or, in other words, for every can of milk that we sold we were obliged to work up a trifle under two thirds of a can at a loss.

"If the producer would sell his milk as other goods are sold; that is, sell us what we want when we want it, and not oblige us to take in excess of our wants when the demand is small, we could easily pay higher prices, certainly to the extent of the loss in working up the surplus milk.

"Whenever the market would warrant we have advanced prices to the producers over and above what contracts call for, and in only one case in the last eight or ten years have we reduced the price to producers after contracts had been sent out.

"We should be glad of any suggestions as to how we should buy of the producers or as to what we can do to handle the business better or improve conditions in any way. We do not know how to transport, handle, and distribute milk at any less expense, paying due regard to the health of the consumer."

Everything said in the foregoing defense of his position by the milk dealer is doubtless sincere and true. Yet the producers of New England demand better prices and the public sentiment opposes any increase in the price of milk. When it comes to deciding whether to comply with the demands of consumer or producer, the milk dealer is financially forced to turn down the producer for the consumer. He depends on the consumer for his money and therefore has to cater to the consumer first. Everyone in the milk dealer's place would do the same thing. The system is to blame rather than the dealer. [TO BE CONTINUED]

Profits in Killing Quack Grass

IF ONE experiment may be trusted, people troubled with quack grass may make money in getting rid of it. Norgord, of Wisconsin, summer-fallowed a field of quack grass at Waupun, Wisconsin, and planted it in hemp the next year as a smothering crop. The quack grass was exterminated, and the fiber from the hemp brought returns at the rate of \$118 an acre. This looks like plucking the flower Safety from the nettle Danger. If the land is not pretty rich the hemp will not kill the quack. It should be manured, therefore, if it needs manure. But that is a good thing too, quack or no quack. If the sod is too thick the quack will kill out the hemp; hence the necessity of summer-fallowing. But summer-fallowing is not a bad thing of itself. What will kill quack grass will probably kill any other grass or weed—including Canada thistles.

Northern and Southern Yields

THE big prize in the boys' corn contests went to the South as usual. It was won by Walker Lee Dunston of Alabama, with a yield from an acre of 232.7 bushels. This beats the former record of 228.75, which went to Jerry Moore of South Carolina. And it beats it in two ways; for while the former high yield cost in the growing 42 cents a bushel, young Mr. Dunston secured his great yield at a cost of only 19.9 cents a bushel. This is a wonderful triumph. And it may well be studied by cotton-planters in the South and corn-growers in the North. Where is the future corn belt to be located anyhow?

The Southern girls carried off the prizes, too, in canning and tomato work. Miss Clyde Sullivan of Georgia put up 2,464 cans from the 5,354 pounds she grew from an acre. But the Northern girls did almost as well, though the second prize, too, went to Dixie. However, the matter is not quite settled as between Miss Lizzie Kelley of South Carolina, whose record seems to be 4,375 pounds, and Miss Lucy Bale of New Jersey, who grew 3,980 pounds.

The best record of a Northern boy was made by Arthur W. Runft of Grundy County, Iowa. His yield was 136.7 bushels. His cost of growing is not given, but it is safe to say that the record is no better in this respect than that of the Southern boy with his record yield grown for 19 cents a bushel. These contests are of enormous importance. The children are showing the older people what can be done.

In a coming issue, a Southern man, one who has been closely in touch with contest work, will give some other interesting facts.

Hints From South Dakota

Condensed

TO GET a start economically in Grimm alfalfa get a few pounds of seed and sow with Sixty Day oats in rows three feet apart. The oats should be thin, as their use lies in marking the rows for cultivation. Thus one may grow his own Grimm seed and get a start cheaply.

Alfalfa hay is better for horses than either prairie hay or timothy—tests on nine hundred horses prove it. Here's an ideal ration, as tested in Kansas, for a 1,150-pound horse—alfalfa hay, ten pounds a day, fed in connection with eight pounds of corn and two pounds of oats.

On the American Plan

AN OHIO farmer who belonged to a mutual building and loan association had some money saved up which he had the right to apply on his farm loan. The loan bore six per cent. interest. He deposited his savings in the association and drew five per cent. on that. He had not quite made up his mind whether to use the money to reduce his loan or to buy some dairy cows and a pure-bred bull. For six months he paid six per cent. interest on it amounting to \$30. But he received interest on his deposit at five per cent., amounting to \$25. The loan association merely charged him five dollars for a six months' option between paying off the loan and buying dairy cattle.

This is an option of value. We do not understand that the European land banks offer anything better, if they give anything as good. Winter is a bad time for junketing trips, but we suggest to the Congressional committees which are studying rural credits that a few days spent among the farmers of Defiance County, Ohio, might be profitable, even though blizzardy.

A Scarecrow Contest is the Next

Tell in 250 words or less how you made your most successful scarecrow and the result it brought. The scarecrow may be any object—bell, clapper, flashing mirror, or anything to keep marauding birds from damaging crops, fruit, or killing poultry. Prizes of three and two dollars will be paid for the first and second best contributions, and one dollar each will be paid for all others used. No contributions will be returned unless especially requested, and a stamped envelope is enclosed. This contest closes February 14th. Address The Contest Editor, FARM AND FIRESIDE, Springfield, Ohio.



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Garden and Orchard

Cabbages for Winter Use

CABBAGES in winter storage are endangered in two directions—from wilting if kept too dry; from rotting if kept too warm and moist. You can hang them up in an ordinary cool house cellar by the roots, with the head wrapped into several thicknesses of ordinary newspaper. This keeps them from drying out and wilting. They are not as liable to rot as when stored in a heap. On a large scale, cabbages are stored in double-walled, tightly-built cold-storage houses, placed in tiers on shelves along the sides, with narrow walks or alleys between so that every part of house and every shelf is accessible. By the use of ventilators the temperature is kept down as near as possible to just above the freezing point. In an outdoor root cellar I would adopt a similar method of storage, rather than place the cabbages in a big heap on the floor. In preparing for such storage the roots are cut off and the damaged or mature outer leaves removed.

Old Grape Vine Not Bearing

A wild vine dug up from a low piece of ground years ago, and transplanted to a higher location on sandy soil, if it fails to properly set the fruit, is probably not to be depended on to give fruit worth having. The first question I would ask is: "Will the fruit, if we bring the vine forcibly into bearing, be good for anything?" Why not set a vine of a known good sort, one that will succeed and give good fruit, even if nothing more than the old reliable Concord? This wild vine, which makes a big growth of wood each year, may be of more use for covering a building, or some unsightly object, with a mass of foliage, than for giving much or desirable fruit. Possibly it may bloom freely, but fail to set fruit for lack of potent pollen. Some grape vines, like the Brighton, are self-sterile, and in order to produce perfect clusters of fruit need the assistance of other varieties near them to pollinize or fertilize the fruit blossoms. If you are bound to get fruit from a wild, strong-growing vine, however, you might try the expedient of girdling the vine. On some of the branches, high enough to leave some chance for unrestricted growth below the point or points of girdling, remove a ring of the bark, say an inch in width, soon after blooming. The return flow of sap in these branches will thus be retarded or checked, and this sap utilized in the production of fruit above the girdled points. Grape-growers in some localities have often resorted to this device of girdling for the purpose of increasing the size of the berries, and of hastening the maturity of the fruit by a week or two.

Soaking Garden Seeds

I have not made it a regular practice to soak garden seeds before sowing them. In early spring, when the ground usually has plenty of moisture, good seeds properly sown hardly ever fail to come up promptly. No need of soaking them then. For summer sowing the case may be different. After this, should I have occasion to sow onion, spinach, or other seeds at a time when the soil is almost dust-dry, I shall not omit soaking them twenty-four hours or so before sowing them. Of course they will have to be drained to free them of surplus water, then mixed with dry sand, plaster, or road dust before they will be in shape for sowing evenly with the garden drill, or even by hand. This treatment will hurry them along and help them to get ahead of the weeds.

Growing Celery on Muck

Can celery be grown on muck soils successfully without stable manures? No doubt, well-drained muck land is often admirably adapted to the growing of celery, and is very extensively used for that purpose; but the muck should be specially prepared for it, first by sweetening, as for instance by lime applications, and next by starting bacterial action, which can best be done by applications of stable or "farm" manures. It is not necessary to use heavy dressings. Six loads of good stable manure per acre are probably as good as two or three times that many, provided that this application is followed up and supplemented with applications of good commercial fertilizers. The muck-land celery-growers in New York and other States apply from one to two tons of high-grade commercial manure, such as is usually offered as "special vegetable manure," analyzing about six per cent. of nitrogen, eight to ten per cent. each of available phosphoric acid and potash, and costing about forty dollars per ton. The same results can probably be obtained by applying the unmixed nitrate of soda, acid phosphate, and muriate of potash in proper proportions, at somewhat smaller cost. I would not care to risk a crop of celery on new muck soil, however, entirely

without farm manure, and it will undoubtedly pay to make even considerable effort in order to get a few loads of it per acre on the land. I would prefer good horse or sheep manure to cow or hog manure, but the commercial pulverized sheep manure is altogether held at too high a figure to be used with profit in such operations. It might be all right for high-priced crops under glass, especially flowering plants. In applying the commercial fertilizer mixtures, I usually sow them, or drill them in, in the required amounts (400 to 1,500 or more pounds per acre), on the freshly plowed and harrowed ground, harrowing again afterward if applied broadcast by hand on the surface. If the separate unmixed standard chemicals are used I do not mix them, but apply each, in proper amount, separately, trusting to thorough harrowing and cultivation afterward for their thorough mixture and incorporation in the soil. T. GR.

The Most Important Green-house Vegetable

Most important? That is lettuce, no doubt. People want it, summer and winter, and in winter especially, every week really. The closer heading forcing varieties are much subject to disease when grown under glass, and the loose but curly-leaved Grand Rapids, which is less subject to such diseases, is now grown by many growers of winter lettuce to the exclusion of all other sorts. The state experiment stations of Massachusetts, New York, and North Carolina have issued bulletins on lettuce forcing and lettuce diseases, and it may be well for people who intend to try their hand on forcing this crop to try to secure these respective bulletins. Some stations charge a small amount, covering first cost, for copies of bulletins sent outside of their own State. T. GR.

Fifty Dollars from a Tenth Acre

By E. V. Laughlin

TO MANY people fifty dollars is not much, but to a struggling young teacher on a small salary it means a good deal. In my case it would pay the groceryman for two months; it may even pay the year's coal bill; and it will certainly go a long ways toward meeting the many little expenses that appear when two little tots are to be fed and clothed. Let me tell you how I made fifty dollars during spare time in the summer vacation.

A few years ago I was elected to a position in a prosperous central Illinois city. We were so fortunate as to secure a place just beyond the city limits. There was a cow pasture of a little more than an acre, and a garden plat of more than the usual size. I was puzzled to know what to do with the garden spot. My work in the schoolroom occupied practically all my time from daylight until dark, and the vacation did not begin until June. Raising early vegetables was decidedly out of the question. Whatever I attempted to raise must be a late crop and something easy to cultivate. I finally turned my attention to melons.

The Soil was Worn Out

My watermelon patch was about forty feet square and contained forty-nine hills. The muskmelon area was about twice as large and contained nearly two hundred hills. These hills were somewhat closer than is customary, but I balanced this by thinning down to two plants per hill. The soil was worn out and needed manure badly, but this I could not afford, consequently the ground went unfertilized.

I staked off the position of each prospective hill, and two or three weeks before planting time carefully spaded up the hill for a distance of two or more feet across and one foot deep. Late in May I planted the seed and it came up about the time the summer vacation began. Owing to the small size of my patch I had no trouble in keeping the weeds out and the ground loose. The little field received probably twenty hoeings before the vines covered the ground. I attribute the large yield to this careful cultivation. The constant stirring kept the surface moist, and at no time did the plants suffer seriously for water.

Cultivation and Quality

I began to pick ripe melons on the 15th of August. They were of fine quality. This I again attributed to the careful cultivation.

Ten or twelve watermelons and forty-five or fifty muskmelons per day was the average yield. I found a ready sale for these among neighbors and to passers-by, charging fifteen to twenty cents for a watermelon and five cents for a muskmelon. These prices were somewhat less than those prevailing in town. I also arranged with my grocer, who came out about twice a week, to return with a load of melons. In this way I sold a great many, though at a lower price than at private sale.

At the close of the season I found that my profit from the forty-nine watermelon hills was twenty dollars, and from the two hundred muskmelon hills thirty dollars, making a total of fifty dollars from one tenth of an acre.

FARMERS' FAVORITE GRAIN DRILLS

In proof of the fact that Farmers' Favorite Drills are right in every way, it is only necessary to say that they have been continuously on the market for more than 50 years. They are used by the best farmers in every grain growing country in the world.

There is Made a Farmers' Favorite Drill for Every Need

Disc Drills, Hoe Drills, Shoe Drills, both plain and fertilizer and in every size from one-horse up.

No seed is too large and none too small for the Farmers' Favorite Force Feed to sow.

Even depth of planting is assured when the Farmers' Favorite Drill puts the seed in.

Send for the Farmers' Favorite Catalogue. Read it and then go to your local dealer and insist on seeing the drill that is sold under a warranty that means much to you.

THE AMERICAN SEEDING MACHINE CO.
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STRAWBERRIES

Write for this beautifully illustrated book—full of information for fruit growers, farmers and gardeners. Lists and describes Allen's hardy, prolific, correctly grown berry plants—Strawberries, Raspberries, Blackberries, Grapes, Currants, etc.—all the best, new and standard varieties and guaranteed true-to-name. Write today for free copy

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Unadilla Silos Are Trustworthy

They preserve silage perfectly. Combine best construction, greatest durability and convenience. Easy to erect and keep air-tight. Write today for catalogue. Agents wanted. Address

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S. C. WHITE LEGHORN BABY CHICKS 10c each

safe arrival guaranteed. No order too large. Hatching EGGS by the setting or thousand, fertility guaranteed. Write for catalogue.

RICHLAND FARMS Box 19, FREDERICK, MD.

MEN WANTED

Prepare as Firemen, Brakemen, Electric Motormen, and colored Train Porters. Hundreds put to work—\$65 to \$150 a month. No experience necessary. 500 more wanted. Enclose stamp for Application Blank.

NAME POSITION YOU WANT
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Strawberry Plants

Guaranteed as good as grows at \$1.00 per 1000 and up. Catalogue FREE.

ALLEN BROTHERS, R. 12, Paw Paw, Mich.

New Easier Better Spraying

Write for Free Book How to save money, labor, time. Banish blight, disease and insects from orchards, etc. Use

Brown's Auto Spray
Style shown has 4 gal. capacity—non-clogging Auto Pop Nozzle. 40 other styles and sizes—hand and power outfits.

E. C. Brown Co., 18 Jy St., Rochester, N. Y.

400,000 Settlers a Year

Immigration figures show that the population of Canada increased during 1913, by the addition of 400,000 new settlers from the United States and Europe. Most of these have gone on farms in Manitoba, Saskatchewan and Alberta.

Lord William Percy, an English Nobleman, says: "The possibilities and opportunities offered by the Canadian West are so infinitely greater than those which exist in England, that it seems absurd to think that people should be impeded from coming to the country where they can most easily and certainly improve their position."

New districts are being opened up, which will make accessible a great number of homesteads in districts especially adapted to mixed farming and grain raising.

For illustrated literature and reduced railway rates, apply to Superintendent of Immigration, Ottawa, Canada, or to the Canadian Government Agent.

M. V. MacInnes, 176 Jefferson Av., Detroit, Mich.
W. S. Nothery, Interurban Bldg., Columbus, Ohio.

160 ACRE FARMS IN WESTERN CANADA FREE



Raising Oats without Proper Fertilizing is Mining—Not Farming

To depend wholly upon the natural supply of plant food in the soil is neither most profitable nor most economical.

Oats take from your land more potash than phosphoric acid or nitrogen. You must supplement the supply of available soil

POTASH

by a fertilizer rich in this element, or your harvest may not pay you for your labor.

Potash Pays in heavier heads, better grade, a greater proportion of grain to straw, and freedom from lodging. Balance the phosphate and nitrogen with 6 to 8% of potash.

Poor crops of oats are often due to rust. Potash gives the plants vigor to resist the rust fungus. Available potash is needed as soon as the oats germinate.

Drill in with the seed 300 to 400 pounds per acre of 3-8-6 or 3-8-8 goods and provide the available plant food for the young plants before the soil supply becomes soluble.

This is an insurance against no crop in bad years.

The old 1-7-1 and 2-8-2 formulas are not up-to-date. They belong to the preliminary, not to the permanent, stage of profitable fertilizing.

We sell **Potash** in any quantity, from one 200-pound bag up.

Write for Prices and Free Book
with Up-to-date Formulas

German Kali Works, Inc., 42 Broadway, New York

Chicago, Monadnock Block New Orleans, Whitney Central Bank Bldg.
Atlanta, Empire Bldg. Savannah, Bank & Trust Bldg. San Francisco



A Map of the Orchard

By H. F. Grinstead

IT IS very desirable to be able to tell the variety, time set, and name of nursery selling every tree in the orchard. I have a simple record kept in a small blank book that shows me at a glance the history of a tree, whether grafted, budded, or seedling, and how often every space has been replanted.

Beginning at the northeast corner of the orchard each row is lettered, the first row on the north side being A, the next B, etc. Thus each tree is numbered beginning at the east end of row. Tree A1 is the first tree in the first row, B3 the third tree in second row, and so on. Below are sample entries in my orchard record book:

- B4 Apple, Jonathan, budded, Star Nursery, 1911.
- B5 Apple, Dwf. H. Clay, Grft. Stark Bros., 1912.
- " Replant Rambo, Grft. Booneville Nursery, 1913.
- C1 Peach, Ark. Seedling, Booneville, 1911.

Practicing Orchard Surgery

By George W. Brown

VERY often upon the farm a little surgery practiced upon some valued tree may be the means of prolonging its life and usefulness for many years.

It is well to look over all orchard trees several times each year. In our orchard several years ago we discovered two King Tompkins County trees badly cracked by frost. During a high autumn wind one of these went crashing down.

The other one we bolstered up with a rod across the crotch, filled in the crevices, after they had been thoroughly cleaned out, with thin cement so no water or frost might enter. The tree is now fine and sturdy and bears well.

The winter season is very disastrous to all fruit orchards, and especially to trees



We couldn't think of losing this Rambo tree

where decay has started. This winter will take its usual toll, all because the fall season was passed by without repairing the trees.

A STATE forester is now employed in each of twenty-two different States and in Hawaii.

Why Not Better Potatoes?

AFTER reading a news bulletin of the U. S. D. A. one is likely to think that the American potato needs more Burbanks and better ones. Our potatoes are not as good in flavor, texture, or color, especially for boiling and frying, as the best European varieties. The foreign potatoes, however, lose their good qualities when grown here. What we seem to need is about half a dozen new and better American varieties. Our starch potatoes are lower in starch than the best German varieties by from four to eight per cent.

Our summers are hot, and we need heat-resisting varieties. Our potatoes are weak in resisting disease, so that the Government is obliged to keep up the quarantine bars against foreign diseases. Where is the old-fashioned blue potato which every Eastern family once grew for baking? The Government experts say we ought to have a better baking potato, and a good one with shallow eyes so that there would not be so much loss in peeling. A close-textured potato is in demand for potato salad. Bring on your Betterburbank! And in the meantime read the U. S. D. A. Bulletin No. 47. It is named "Lessons for American Potato Growers from German Experiences." We seem to need some lessons.

Perhaps some of the corn-growers' clubs can take on the betterment of the American potato as a side line, or, better still, offer prizes to potato clubs for the "spud" that will fill the bill of fare most exactly.



THE CHATHAM Grain Grader and Cleaner

Handles 70 Kinds of Seed Grain and Grass Seed
From Wheat, it takes Wild Oats, Tame Oats, Cockle, Rye and Smut.
Cleans the dirtiest Flax. Has special knocker and skimmer which prevents clogging. (Other machines choke up.)
Takes Dodder, Barn Yard Grass and Foxtail out of Alfalfa and Millet "sick as a whistle."
Takes Buckhorn from Clover.
Sorts Corn for Drop Planter.
Famous BEAN MILL. Handles all varieties, takes out the SPLITS, Clay, Straw, etc.
Handles Peas as well as any Grain or Grass Seed. Removes foul weed seed and all shrunk, cracked and sickly grains. Takes out all dirt, dust and chaff. It is also a bully chaffer. Handles 60 bushels per hour. Gas power or hand power. Easiest running mill.



Manson Campbell

For \$100, I Clean and Grade Your Seed Grain

You can't afford to plant common Seed and take chances on a poor crop, when I am offering to scientifically clean and grade every bushel of your Seed Grain for this spring's planting for one paltry dollar.

Here's my proposition, and if you are a smart man you will write me before sunrise tomorrow:

Send me one dollar and I will ship you, FREIGHT PAID by MYSELF, this improved 1914 Chatham Grain Grader and Cleaner, with all equipment. Clean your Seed Wheat, Oats, Flax, Barley, Peas, Beans, Corn, Grass Seed, etc. Then PLANT those fine seed. AFTER you have harvested a bumper crop, pay me the balance of my low price. Not one penny need you pay, except the \$1, until next October. And by October YOUR CHATHAM WILL HAVE MORE THAN PAID ITS ENTIRE COST IN INCREASED CROPS. Then you'll have it to work FREE for you the rest of your life.

Your Dollar Returned

"I only want the dollar as evidence of good faith—to protect myself from mischievous boys. If after 30 days' hard test, you don't want my 'Chatham,' send it back at my expense and I will return the dollar."

A "Made-to-Order" Machine

Every "Chatham" is practically a made-to-order machine, for I send you the exact and proper Screens, Riddles, Hurdles and Sieves to grade and clean every Grain and Grass Seed grown in your locality. That's the secret of my success. I would not be the leading maker of Graders and Cleaners if I had tried to make my equipment fit ten million farms. What would you think of a clothing maker whose suits were all one size? Wouldn't it be a miracle if he gave you a fit?

Yet all makers of Graders and Cleaners, except me, send the same equipment, whether you live in Maine, Ohio or Oregon. They wouldn't do that, if they had my 41 years' experience.

Extra Screens Free

I use, all together, 81 Screens and Sieves. It usually requires 15 to 17 for the average farm. These I select from the 81. After 41 years in the business, I am pretty sure to pick the exact equipment needed on your farm. If I shouldn't, just drop me a line and I'll send your additional requirements. There will be no charge for this.

Samples Graded Free

Maybe you have some Seed Grain that you can't clean or grade or separate. Send me a sample. I will purify it and tell you how you can do it cheaply. No charge for this.

Seed Corn Sorted

My big Corn Sorting Attachment, invented 2 years ago, is a great success. Twelve thousand farmers and many leading Agricultural Colleges are using it. It is the only machine I know of which scientifically sorts seed corn for drop planters.

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The FARMERS' LOBBY.

THERE is a good deal of inquiry as to the effect the new currency law may be expected to have on the farmer and his particular set of financial problems. Will it make it easier for the farmer to place his loan? Will it reduce interest on his real-estate mortgage or on his current short-time loan at the bank? Will it tend to close up the all-too-wide gap between the average interest rate that agriculture pays and the average rate that other business pays? These are mightily pointed questions, and the farmer has a right to insist on knowing what he can expect. Let us see how this new turn in affairs will affect us.

The new act grants authority for national banks which are members of the new federal reserve system to carry farm loans to the extent of twenty-five per cent. of their capital and surplus, or thirty-three and one-third per cent. of their time deposits. This is an important provision. It greatly liberalizes the legal attitude toward the farmer. Until a very few years ago national banks were not permitted to loan at all on real estate. The theory was that, while properly selected real-estate security is the best possible, it is slow of realization. Commercial paper, at short periods, is the ideal quickly realizable security. National banks were at first confined to short-time paper. Now they are given this permission to organize real-estate loaning departments.

The New System will Equalize Sectional Conditions

THIS means that the credit and responsibility of national banks will stand behind real-estate loans, which in itself will be a valuable service to the farmer. The national banks now being organized together into a closely knitted co-operating system,—as they are under this new law,—it is inevitable that a national bank's agency and sponsorship in the transaction will give the farm loan a better standing, and, especially in foreign markets, will increase it in favor. That means a tendency to lower rates of interest.

Of course realization of the benefits of such a tendency will be slow. There will doubtless be an equalization of conditions as between different sections of the country. Everybody knows that in some parts of the country the farmer's paper is the most prized at the banks; whether it be his long-time mortgage loan, his cattle paper, or his short-time accommodation note, he is sure to get what he wants at the best going rate. In other sections the farmer is unmercifully "soaked." For instance, when I lived in Iowa the prevailing rate on farm-realty loans was five per cent.; on city loans, six. When I came East I saw these figures just reversed; farm loans brought six, city loans five per cent. Why? Because in the Middle West the financial machinery was geared up to taking care of the farmer. He was the leading citizen; he owned the banks, very largely; his credit was better than that of the Eastern farmer, even though his security or his responsibility might be no whit better.

That contrast between Iowa and Maryland is mild compared to some others that might be made. I know some people who have been loaning money to small farmers in the Delta region of the Mississippi and netting as high as fifteen per cent. on it. They anticipate that in the course of a reasonable period the new currency system will spoil their graft; will equalize conditions so that that section will get cheaper money. That is what President Wilson and the leading makers of the legislation believe too. The currency act contemplates that all paper rediscounted by the reserve associations shall be of the class arising out of the production and trade in consumable products.

Right here an explanation may help. A farmer's note, given to a national bank for money to buy land or make permanent improvements, will not be available for rediscount. The note may be first-class, the investment excellent; but that is not the point. The point is that in the nature of the farmer's business

The Currency Bill—What We May Expect

By Judson C. Welliver

considerable time must elapse between the making of that investment and the accretion of returns on it. It may have to be renewed and carried indefinitely. Such investments are perfectly good; they are desirable, and are sought by institutions dealing in them; but they cannot be allowed to interfere with the bank accommodations required for current trade and industry.

Local Banks Will Give Better Service

IT MUST be realized that the new law makes more concessions to agriculture than to any other industry. It provides that "notes, drafts, and bills drawn or issued for agricultural purposes or based on live stock, and having a maturing not exceeding six months, may be rediscounted," while obligations arising out of any other class of transactions are limited in maturity to ninety days.

This is a very real recognition of the farmer's special necessities. He requires more time to turn over his investments than does the trader; so it is conceded in the law. In this connection it is to be remembered that these limitations as to maturity date from the time the paper is rediscounted, and not from the date of the paper. Thus a farmer may give his note for nine months to his local bank. At the end of three months the local bank may take it to the regional bank for rediscount, and that institution may accept it. So the farmer gets a nine months' limit on his paper for rediscount purposes.

Under the new system the capacity of the local banks to take care of their communities will be vastly increased. In periods of tight money, when demands overrun local banking facilities, the local banks can carry their paper to the reserve bank and convert it into reserve notes; that will help to ease the situation.



Tenant: "That's fine for the farmer, but it don't get me anything"

True, this new system does not reach down to the man who has no credit with his local bank, as the European rural credit systems have done. Nothing has been attempted in this legislation, paralleling these European systems. But when this whole matter is perfected I think we will see the Federal Reserve Board bossing the whole organization in the name of Uncle Sam, operating with the system of reserve banks as a right hand and with a rural credit system as a left hand.

How Amortization Works on Long-Time Loans

THIS rural credit system will probably be headed by a great land bank, for which the capital will be furnished by the Government, or raised by popular subscription under government auspices. Such a government land bank will do a business entirely different from that of the national banks and the

reserve system. Whereas the national banking system seeks to avoid long-time investments and to confine business to short-time paper which is produced in the rapid commercial movements of the country, the land-bank system will seek and prefer very long-time investments. This is something the nation peculiarly needs. There should be a system of farm loans providing for automatic amortization; that is, for paying off the principal and interest together. Nobody has more than stopped to think of the advantages of such a system in this country; yet it is in extensive operation abroad. The American who gives serious thought to an obligation with five years to run is a marvel; abroad, they make loans for fifty years, on a plan by which each semiannual interest payment includes a small payment on the principal. Spreading the whole transaction over a period of fifty years, this semiannual payment on the principal represents almost no burden at all. Yet by dint of this procedure the security gets better all the time, and the property, with its encumbrance constantly being reduced, is constantly easier to sell if the owner wants to sell.

What About the Man Who Has No Bank Credit?

THIS system of amortized loans is very similar to that of mortgage debentures that used to be a good deal more popular in this country than it is now. Every reader of middle age will remember when the "loan and trust company" plan was operated everywhere. The system proved a failure in our agricultural sections; its collapse had much to do with precipitating the panic of 1893. But the excesses of finance caused the troubles of 1893. Men went crazy about land values; they loaned vastly more than the security was worth.

A system of this sort would have to be worked out in great detail and with extreme care. Suppose we begin with the Government's providing capital enough to represent the difference between the face value of the mortgage and the amount of debentures issued. The interest on the mortgage would be a little higher than on the debentures, probably about one half of one per cent., and that would pay the expense of managing the business and earn a return on the Government's capital. The capital, of course, would be constantly turning over, so that a small earning on each transaction would make it possible to sustain a very large capital investment.

There are apparent dangers in such a system. One of them is that if the farmer gets the benefit of government credit, and very low rates of interest, the disposition to borrow will be stimulated, and the price of lands will be further inflated; a result which in many regions is by no means desirable from the standpoint of the whole community, no matter what the individual landowner may think about it.

A central mortgage bank of this sort would have to maintain branches throughout the country, wherever the local business is. Perhaps it would be practicable to let the member banks of the federal reserve system act as such agents. They should be strictly agents.

But a land bank would give small help to the man who most needs it—the tenant farmer with no land for security. This class gets help through the mutual loaning societies, in Europe. Some adaptation of that system for American uses will come in connection with the land-bank's organization. But it is a difficult problem for this country. What farmer, owning his farm, having all the bank credit he needs for himself, is going to pool his credit in with that of his less fortunate neighbor in order to get cheap money for the latter? I know mighty few such.

Neither the federal reserve system, as it has been established, nor the land bank that is proposed, goes far toward helping the man who has no bank credit.

After all, the largest benefit the farmer will get from the new currency legislation is exactly that which everybody else gets. The system is not intended to serve particular classes. It ought not to.



The Burden of Yesterday

By Adelaide Stedman

Illustrated by R. Emmett Owen



Synopsis of Preceding Chapters

After a period of waiting for the removal of obstacles, Faith Hamilton and William Drake become engaged. Faith's introduction, however, into Drake's inharmonious household, where his selfish sister-in-law, Laura, robs her own children of delicacies at table and quarrels with his mother, brings about such nervous tension that when in a thoughtless moment Drake suggests to Faith that it would be better to send her dependent little sister to boarding school than to bring her there, Faith tells him that she cannot endure the situation and will not marry him.

Mr. Cumnock is a rich, self-made cow-puncher, whose daughter Ernestine is a dear friend of Faith's. He was for a brief moment in love with Faith himself, but, loving Drake, she refused his offer of marriage.

Cumnock's daughter Ernestine was on the point of an engagement to Drake's secretary, Robert Lewis, when she finds out that he plead guilty in Juvenile Court to a theft of three cream puffs. She does not know that he believes her acquainted with this episode, and in her scorn for his silence regarding it she dismisses him, and resumes her friendship with another suitor, Kirk Hazleton. Now, Hazleton was Robert's copartner in this childish theft, but nobody knows it except Robert. Heart-broken, Robert goes West to fight out his salvation in a new environment.

Chapter XVIII.

WILLIAM DRAKE aged ten years in the month that followed the breaking of his engagement. In a surprisingly short time the home life resumed its regular routine. Mrs. Drake and Laura returned to their old suspicious attitudes, and to all outward appearances Faith was forgotten. Drake had never revealed the real cause of the break. Affairs were quite bad enough without that. In reply to his mother's questions he had said emphatically, "Our disagreement had nothing to do with you. You may be easy about that." And no further explanation was offered. As for Laura, she was only too happy at the change in the situation to dream of questioning it unnecessarily.

As for Drake himself, he seemed to have lost the capacity for deep emotion. He was worn out, numb. Nothing seemed to greatly matter. He had fought hard and lost. Faith had been right. He *was* bowed down by the burden of yesterday. He had struggled against the shackles, but now he plodded along, like a carrier horse, resigned to its long uninteresting routine.

Then one day came a letter from Faith, reading:

MY DEAR WILLIAM: I am leaving in an hour for San Francisco, en route to Hawaii, so by the time this letter reaches you I shall be well on my way. I cannot see any other solution of my problem. The more I think the more I am convinced that nothing but unhappiness would have resulted from our marriage under the existing circumstances—and I have argued against my heart. Good-by, dear friend, that is all I have the right to write.

FAITH HAMILTON.

Drake locked the letter in his private drawer and the last spark of hope died out of his heart.

The next day at noon, Laura and Mr. Cumnock met in the hallway outside of Drake's office. They entered and, finding him out, Mr. Cumnock suggested that they lunch together and then return. Laura assented prettily, and soon they were in the electric-lit luxurious atmosphere of a fashionable hotel such as Laura loved.

"This is a rare treat for me," she smiled appreciatively.

Chester Cumnock glowed. Just that look and that expression pleased him. Besides, Laura was a decidedly pretty woman. Any man might be proud to be seen in public with her. With a dainty assumption of her feminine duty she directed the ordering of an astonishingly inexpensive and tasty luncheon.

Laura always talked personalities, or led others to do so. Now she soon had her far from unwilling escort relate the main events of the past and his hopes for the future.

"I expect this year to be the biggest one in my life," he announced enthusiastically. "I'm just going to see Drake about placing this Mexican property of mine. It's a great tract, and he will be able to sell it. It'll be a mighty big thing for both of us."

"Poor Will, I hope something good is coming his way. He deserves it."

Cumnock understood her covert reference to the broken engagement, admiring her sympathy.

"Drake isn't so badly off while you are there to make a home for him."

Laura looked up from her grape-fruit with a wistful sigh.

"I wish I could feel sure of that." Her eyes slowly filled with tears. "I can't help feeling my position terribly—and imagining all sorts of horrible things."

"Horrible things?" he questioned.

"Yes. You *know* I don't think Faith is mercenary, but I can't help wondering if Will had not been so financially burdened things wouldn't have gone better. Can you imagine how such a thought tortures me?"

Cumnock nodded understandingly.

"The Bible was right in commending the widows and orphans to everyone's care. A mother with young children is so helpless, especially a mother who has no gift or talent but the useless one of loving."

The big Westerner felt an almost irresistible desire to pat the small white hand which lay so near him on the table. He refrained, but compromised by saying in his big comfortable voice:

"Things'll come your way yet, little woman."

She smiled brilliantly through the mist in her eyes. "Thank you," she whispered. "It's been a relief just to talk to you. You see I can never unburden myself to poor Will. He has troubles enough to bear without my poor little grievances. But enough about myself." She seemed to brush aside her affairs with a coquettishly petulant gesture, and went on: "How you will enjoy your trip across the continent. Just the very sound of the words—a trip across the continent—is inspiring. I've never been any further west than Pittsburgh."

A sudden thought struck Cumnock, suggested by her remarks and his pleasure in her society.

"Why don't you come with us?" he questioned abruptly.

"What?"

"We have a big private car, and more room than we know what to do with. It'll be a pleasure to have you—and a favor to me."

Laura, who had been looking at him with dazed eyes, quickly lowered her lashes, then raised them, as



The young man who appeared was Robert

he went on: "You'll be such company for Ernestine."

Laura accepted the invitation, breathless at her good fortune. To travel in a private car in such congenial company! She pressed Mr. Cumnock's hand most gratefully as she thanked him, and became so pretty, so fascinating and gay in the rush of high spirits that swept over her, that it was four o'clock before her host remembered that he had yet to see Mr. Drake.

The mood of dazed happiness seemed to follow Cumnock to the office, for Drake received his offer, much as Laura had, with such a sudden access of energy and high spirits that even the burly Westerner was conscious of the intensity of his handshake for a good many minutes after his fingers were released.

They were to start in three days. Arrangements were rapidly made. Mrs. Drake was to take the two children for a visit to Jobyua Price while Laura and Drake were away. No one but the men realized the vastness of the deal Drake was about to put through, but he realized it with a happy tightening of the heart he was afraid to acknowledge even to himself; for if the land proved to be what it was represented, and he believed it would, for Cumnock knew Western land, he could sell it; and that would mean money, money in such quantity that it would bring him financial freedom—and Faith. But he tried to conceal his high hopes. There had been too many disappointments already.

The party consisted of Mr. Cumnock and his daughter, Kirk Hazleton, Laura, and Mr. Drake. The weather was perfect, and they rushed through States full of ripe crops awaiting the harvesting, through the desert, and at last came to the fruitful Western coast, and headed south to the Mexican border.

Drake, in khaki suit and felt hat, plunged joyfully into the arid vastness of the Cumnock property, which lay waiting for water to transform it into fruitful farm land.

The rest of the party remained in the near-by Mexican town, enjoying the strangeness of foreign life.

After two days Drake emerged from the open spaces, tanned, tired, coated with dust but infinitely happy. Irrigation was possible. He could sell the land. He could discharge his debts. He could marry Faith. His bloodshot eyes smiled at the caked mud on his boots. Earth and water! It was the historic combination to produce plenty.

There was no telegraph station among the cluster of huts that marked the northern rim of the Cumnock land, so he was forced to control his patience to communicate the happy message until he could ride back to civilization in the morning. He pictured Faith in San Francisco, receiving the exciting yellow envelope, turning back and meeting him!

After the formalities connected with seeing that the title was clear had been finished, time hung heavily. He sat at a table on the street, before the little café, accompanied by his guide, a Mexican he had known years before in Arizona. And while he ate his portion of Mexican beans swimming in oil and talked of the land, the Mexican drank mescal until his answers grew vague, violent, and garrulous.

"The señor had better sell quick!" he chuckled, with the boastfulness of superior knowledge. "I like señor from the old days, and I tell him he had better sell very quick!"

"Why?" Drake almost shouted in his sudden alarm and anxiety.

The Mexican chuckled again at the evident effect he had produced. Then, with drunken gravity, he went through the motions of loading and firing a rifle. "Land is no good, soaked with blood, eh, señor? Only three know yet! It is a big secret! But you, my friend, I tell!"

"It isn't true! You're drunk! This province is peaceful!" Drake denied furiously, not daring to believe.

"Pst!" the Mexican cautioned. "It is a secret yet."

Drake felt the hopelessness of arguing with an intoxicated man, so he led the Mexican to his room, determined to keep hold of him until in his sober senses he could tell the truth. All night long he sat listening to the Mexican's heavy breathing, torn between anxiety and disbelief. Then with morning came conviction. The man had not lied. Swearing Drake to secrecy, he showed him papers that proved his words.

"You see," boasted Manuel, "drunk or sober, I am your friend. There is still time to sell. It will not happen for four or five weeks."

Drake felt a wild desire to hold his ears; to shut out these words of subtlest temptation. He could not sell land soon to be rendered valueless by war.

Chapter XIX.

THERE is no condition like financial strain to reveal the seamy side of character, and after Drake's gloomy return from his mission the previously congenial party in the private car set out on the homeward journey with nerves and tempers taut and irritable.

Only Ernestine and Kirk were even outwardly calm, and their mental conditions were even more upset than the others, for in spite of frequent disagreements both of them felt that such sparring could not long continue. He must ask the inevitable question and she must answer it.

The morning they left the Mexican boundary Mr. Cumnock had said sharply for him:

"Erny, how long are you going to keep Kirk on the anxious seat? You know I'd like to see it, and you ought to know your own mind by this time. For Heaven's sake get the business over!"

All the rest of the morning the girl questioned herself ceaselessly, without coming to any decision. She didn't feel anything one way or the other. She would accept Kirk. She liked him and he and her father would be happy. Her buoyant nature rebelled at the mental discomfort so evident all about her. As she looked around she could see her father and Laura Drake sitting on the observation platform, talking about something which made Laura's eyes fill, and Mr. Cumnock grow emphatic and wrathful, while Mr. Drake was moodily staring out of the window, and the girl's heart ached for him.

Luncheon was served, and immediately afterward a big bluff brakeman came lumbering into the car.

"Beg pardon, miss," he began, stopping in front of Ernestine. "But haven't ye any newspapers or magazines to spare?"

"Why, yes."

"I'd be much obliged to ye for 'em."

"Here are all sorts." Ernestine waved her hand toward the well stocked book rack.

The big brakeman laughed. "I don't want 'em for myself, miss. I throw 'em off at all these God-forsaken little stations, a thousand miles from nowhere, where mail and papers are events and reading matter at a premium."

Interested and a little touched, the whole party gathered on the platform to [CONTINUED ON PAGE 21]

The Farm Boy and the City Shop

By Robert J. Spence



A GENERATION ago the boy from the country on entering a machine shop was able, through the kindly supervision of the owner workman himself, in a month or two to become fairly proficient in the manipulation of a cold chisel or a coarse file, and such simple machines as a hand-milling machine or a power-milling machine. Then, having secured a foothold in the shop through the use of these tools, with time and patience he became skilled in the use of the drill press, the lathe, and the planer. After that he was accepted and adopted into the works as one of the shop family, and steady employment was practically assured.

To-day how completely different it all is! No longer is the farm boy who shows an aptitude toward tastefully repairing work harness with wire bailed as a "born mechanic" by any but his neighbors. If sent to the city to make his mark in the machine shop he finds before him a condition of affairs entirely different from his preconceived notion.

He finds that the owner, as a rule, has an interest in the factory only in the same manner that one has an interest in one's railroad stock certificates; that the foreman directly in charge of him cares not for him but for his daily production. He soon learns that the output from his machine must unceasingly register close to one hundred per cent. efficiency on an efficiency expert's card index or there will be somebody else on his job without delay. In short, he discovers at the start that for a few years there will be a wearying, wearing grind, initiated and sustained by present-day commercialism.

He soon discovers that he must take his chances, not with boys of his own kind and condition, who have similarly marked mechanical ability, but with tireless, labor-absorbing immigrants of

every race and clime—just as apt, able, enterprising, and earnest as he.

And he further learns that to attempt to subsist indoors in a city shop, and on the wages derived from this unskilled work at the bottom round of the mechanical ladder, is decidedly detrimental to his outdoor, country-nourished physique. Still, providing his determination of mind does for a time withstand the daily assaults, put upon his body, his ambition soon succumbs to the weariness and daily grind of the work in which he finds himself classed as nothing better than a trained ape, among aliens with whom he feels no kinship.



He succumbs to the daily grind

The good, old-fashioned way of entering a shop is gone, and the boy from the country must attempt to begin his shop life on a higher plane than that which was customary a generation ago.

How can he do this? Here lies the great difficulty which the city boy in his own circumstances does not

experience. Apprentice him? Yes, if you can. But—and the "but" is a big one—apprentices in desirable, skilled shop trades are being chosen from among those city boys having friends at court; sons of foremen, youthful relatives of men of influence throughout the shop, and such. This entrance is seldom open to an unsponsored farmer's boy.

Besides, the tendency throughout the country among factory owners seems to be to do away with the apprenticeship system. They hold that the expense incurred in training the apprentice is not justified by results, as they are unable to hold the apprentice long enough as a journeyman to make the training a profitable investment.

Again, the times demand a technical knowledge of a shop trade in conjunction with mere skilled ability to operate machines, and only a few of the greater of our corporations can afford to give their apprentices classroom instructions in correlation with their shop work. Those shops giving this essential training are so few and their number of accepted entering apprentices so limited that the chances for a boy from a country district, without influence, being chosen to fill an existing vacancy from their list of eligibles are slight. What then? The trade school? Yes!

The trade school was instituted to take care of such cases. With its practical, adequately supervised shop work and thorough classroom instruction it seems the one ideal solution of the problem.

But—and the big "but" again crops in—the trade school can be made use of only by those farmers' sons who live within reach of such a school. I know of no one who I think would honestly advise a farmer's boy to go to the expense of board and room while taking a four years' course in a city trade school, while other things in higher education might be had for practically the same money and the same effort.

It is my opinion that if a farmer's boy, though believing nature has endowed him with special mechanical ability, would put into his farm work the same amount of wide-awake energy and brain training that would be required of him in a city shop to become highly



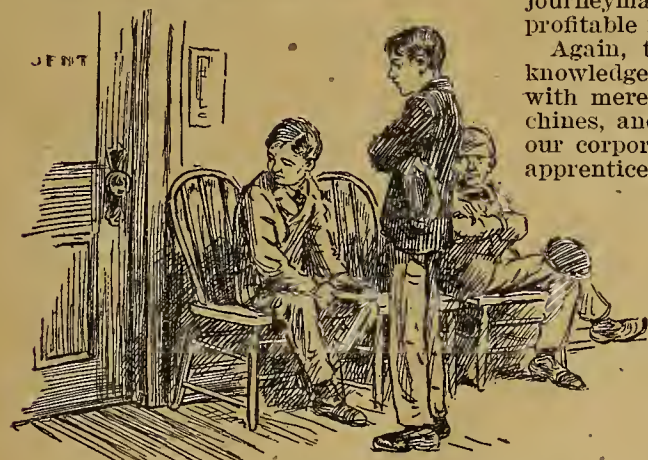
The foreman cares not for him

proficient as a machinist, all things being equal, he would gain much more in the long run by remaining at home on the farm.

Parallel Cases

SIR, each bee in your hive will some day be a rover,
If you have on your place neither flowers nor clover.
And your boy or your girl is somewhat like a bee, sir:
You must keep love and joy in your home, believe me, sir.

INSTEAD of objecting to the children being around horses, better teach them all about the humane care of animals. The children will not be so likely to be hurt by horses in after life.



This is different from his preconceived notions

The Experience Bazaar

Editorial Note—Here is an open market for the exchange of experiences. Will you not bring your problems and leave them behind? Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

"Let Us All be Up and Doing!"

DEAR FIRESIDE EDITOR: In the year 1898 my husband and I moved from Kentucky to Illinois with the idea (as wages were better there) of earning enough money to purchase a home. The "idea" and less than five dollars in cash were about all the stock in hand to begin with. After renting a cheap house in a village we set to work at anything to be found to do. During harvest time my husband went with a thresher gang and helped stack straw. Occasionally he painted a house, and during the winter months he worked as a section hand on the railroad, while I took in washing, sewed carpet strings, and so forth. We stayed there a little more than a year and saved nothing, of course, but found a place to work on a farm at twenty-five dollars per month, with house, garden, orchard, and cow furnished.

A Good Broom and Two Brave Hearts

The house was a very poor one. Sometimes I was obliged to sweep the snow from my kitchen floor before I could get breakfast for the hired men. We stayed in this crazy old structure for two years, then our landlord had it torn away and built a good, comfortable house. We only lived in it one year though, for we had saved five hundred dollars during those three years. We rented one hundred and sixty acres of land from the same man; this place had very good buildings on it, and we had to pay seventy-five dollars a year "privilege rent." This included the

house, garden, orchard, and six or seven acres of pasture land.

We sowed twenty acres to oats and the remainder in corn, which was all cultivated and hauled to the elevator at our own expense, the owner of the land getting one half the proceeds. We paid for two spans of mules and one old horse, and went in debt for two horses and a number of farming implements, buying most of them at sales and getting twelve months' time in which to pay for them. However, we got them all paid for and had some money left in the bank the second year. The third year we again had good crops, so we decided to sell out and at least make a payment on a home of our own.

Eyes That Could See the Future

We had saved, on an average, five hundred dollars each year for three years. After selling horses and farming implements and drawing out what we had in the bank, we had just two thousand dollars.

We wished to live in a good community, for we now had three boys to educate, so we decided to move back to the land of our birth, down in old Kentucky, "where the grass is always blue," within two and one-half miles of the famous little college town of Berea.

We bought fifty acres of thin land and a badly run-down farm. We had only enough money left to buy a little Jersey cow and nine hens. By going in debt for an old brood mare we had a seventy-five-dollar mule colt to sell that fall.

The first thing my husband did in the way of improvements for our new home was to break rock for sixty days on a new turnpike running past our farm. He did this without pay, for it raised the value of his farm.

The Reward

We now have thoroughbred fowls, and some years I sell more than one hundred dollars' worth of chickens. Last year I started in to raise turkeys with five White Holland turkey hens. I sent to Ohio for a gobbler to mate with them so I could be sure they were not inbred. In the fall I sold eighty-seven dollars' worth of turkeys. This year I kept seven turkey hens, and if nothing serious happens I can sell one hundred and fifty dollars' worth this fall. We keep all the nicest heifer calves, and now have five fine Jersey cows and a good cream separator.

I sell butter here in our home town at twenty-five cents per pound, buttermilk at ten cents per gallon, cream at fifteen cents per quart.

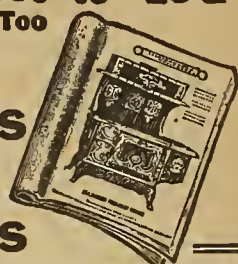
We have been living here ten years and have greatly improved the soil and fencing. How well we have succeeded you can judge when I tell you that we have refused an offer of more than double what we paid for our farm.

This fall we expect to build a new house, and perhaps a barn and silo, and when the offer is more than trebled we might think of looking for a larger place for our boys, as the oldest one means to study agriculture this winter at Berea College.
J. W. F., Kentucky.

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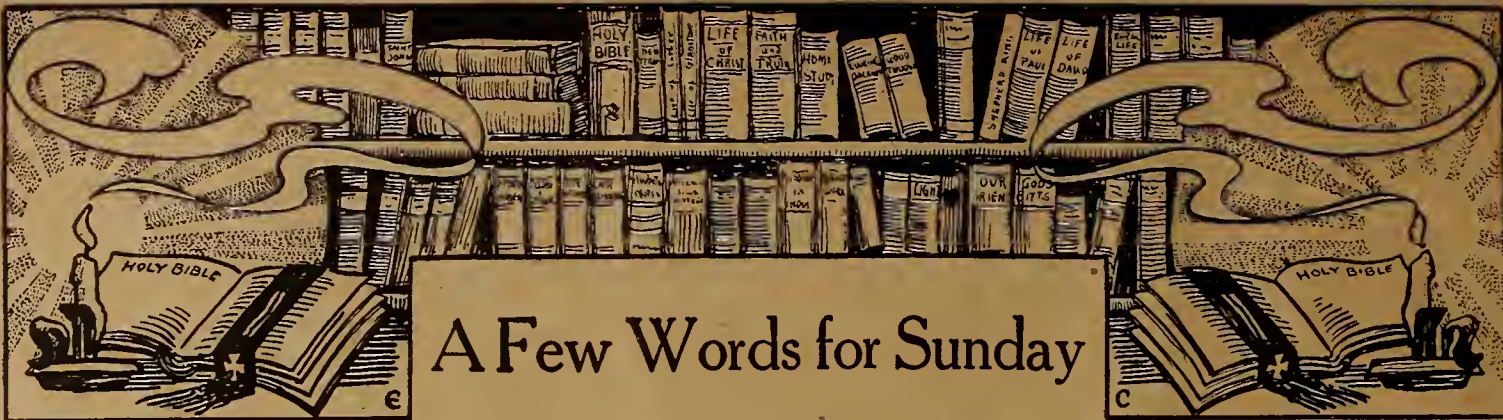
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A Few Words for Sunday

Rivals

By Anna B. Taft

ONCE upon a time two country churches stood on opposite sides of the main street of a little village so small it could barely support one church. The usual pious dislike of one another, so common in such cases, existed in these rival organizations.

Each church was poor, each church was running down, and the community was sadly in need of good, constructive work to make conditions better. One of the problems that pressed equally hard upon the two churches was the diminished midweek prayer meeting. One evening every week, and the same evening, both churches were lighted and heated and a very few of the righteous came out to a dry, uninspiring meeting. Time passed and things continued to grow worse instead of better. When they were just about as bad as they could be a man from one church and a man from the other church met one day at the store and a discussion arose as to why the prayer meetings were so poorly attended. It was decided that the reason was the board sidewalks were so badly out of repair that people did not dare venture out. If that were the reason the solution was simple enough: get together and fix them. This both churches did with a surprising amount of enjoyment.

When this task was completed, and in celebration of it, it was decided to have a joint picnic, and while off on the picnic some of the real needs of the community were discussed. More sidewalks than the stretch going by the churches needed repairing. The roads should be better. "Why not a public library?" And back from the picnic they came, hand in hand, as it were, with lots of community work planned.

One day quite unexpectedly one of the good brethren said, "Why not hold our prayer meeting together, instead of separately—one week in one church and one in the other?" This was done, and as time passed the community began to look up, things were more prosperous, social life increased, and both sinners and righteous found plenty of work to do to make this little village a good place to live in.

Then the town pessimist said, "If those people don't look out, pretty soon there won't be but one church." And the town optimist said, "What brotherliness grows out of common toil!" And the funny part of it was they were both right.

What is Prayer?

Sunday-school lesson, February 1st: The Unfriendly Neighbor. Luke 11, 1-30.

Golden Text: Ask and it shall be given you; seek and ye shall find; knock and it shall be opened unto you.

THERE is no magic about prayer in the Christian sense. It is not an incantation or a spell. It does not literally pick up a mountain and set it in a new place. Nor indeed will the practice of prayer even insure loveliness of character. Action and thought put their indelible impress on character, and one may pray as insincerely as one may smile. But, difficult though it be to define or explain precisely the effect of prayer, there is no doubt, to those who have watched men and women and life, that the "prayer of the righteous man availeth much." Explain it as imagination, as mental influence, as the direct action of the Holy Spirit, however it be, sincere prayer makes for strength and poise, for courage and wisdom, for quietness, for perseverance, for kindness, and for a higher view of living.

Christ's Prayers

There is a thin volume by an Englishman, Doctor Vanghn, entitled, "The Prayers of Jesus Christ." No more beautiful study of that life and character was ever made than this small essay that could be read in two hours or less. It shows what we seldom realize, how constant a feature in that daily life was prayer, and how noticeable its effect. It was in the midst of these crowded weeks of journeying and preaching, where at every gathering were enemies watching a chance to harm not the Teacher Himself so much as His teaching, that He returned to His disciples after an ab-

sence spent, as was evidently his wont, in prayer. Perhaps they were struck afresh with the peace and joy that showed in His face, the sense of serenity and power that was in His presence. Perhaps they had gathered their courage at last for a request they had long had in mind, for they begged, "Lord, teach us to pray as John also taught his disciples."

They thought no doubt of some petition especially for their band, but instead was given them a prayer for all the peoples of the earth, and for all time. It was the first of our Christian liturgies; and whatever objections may be held to set forms of prayer, yet these words of our Lord are repeated in the services of practically every branch of the Christian Church.

Christ's Whole Teaching in Essence

As one reads the familiar words thoughtfully, how unbelievable it seems that with this guide ever before us, giving in itself an absolutely simple and clean definition of the relations of God and man, Christendom should ever have strayed so far from this conception of the fatherhood, the friendliness of God!

There is a story of the trapdoor in the floor of Olympus, which the Greek gods had to keep closed. Through it came up the prayers of the earth which were almost wholly complaints, praise and thanksgiving being too infrequent to make any impression on the dolorous sound. There is a good bit of truth in that tale.

"After this manner pray ye," said the greatest Teacher the world has known. Pray for the peace and righteousness of all mankind; pray for your daily needs; pray for forgiveness of your sin, and pray that you may through all your years save alive your sense of holiness. Here are the essentials for all human beings alike in all times and in all lands, and "our Heavenly Father knoweth that we have need of these things."

Mohammed's Prayer

Every religion has its especial prayers. Many of them may once have been noble of aim but have degenerated till they have become as meaningless as the paper strips that decorate the temples of Japan. But the prayer that the Mohammedan utters daily has a sublimity reminding us that, with all our differences, we are of "one fold and one Shepherd":

Praise be to God, maker of the universe, The merciful, the compassionate, Lord of the Day of Judgment. To Thee we give our worship. From Thee we have our help. Guide us in the right way, In the way of those whom thou hast loaded with blessing; Not in the way of those who have encountered Thy wrath and gone astray.

The Beacon Light of Progress



I HAVE inspired men to sweep back the wilderness and till the virgin soil! I have heard strong men lift their voices in praise of a gracious Creator!

Those that follow my light have prospered. I offer the same to you: Follow me over the hard path of Life! I will lead you faithfully, for I serve none but the people!—CHESLA SHERLOCK.

Teacher and Pharisee

Sunday-school lesson, February 8th: Darkness and Light. Luke 11, 14-26, 33-36.

Golden Text: Look therefore whether the light that is in thee be not darkness.

THIS eleventh chapter of Luke seems hardly more than notes on a series of discourses and incidents, and to get any realization of the crowded and excited scenes one must fill in the outlines. The strange Preacher was now so well known that leaders from Jerusalem were following Him from place to place, uneasy at His popularity, and ready to interfere at every turn. No longer was His seemingly simple task of friendly talk with a poor Samaritan woman; of instructing eager listeners beside the Sea of Galilee; of helping a distracted father whose little daughter lay dying. Instead, day after day, He spoke in the fields, beside the roads, in village streets, wherever a crowd gathered about Him, and now there was always a crowd ready. Among the throngs were eager, trustful folk bringing their sick for His touch; and always, also, sharp-eyed and intent, the Pharisees from Jerusalem watched, ready to turn every word from its meaning and bewilder the plain people who looked up respectfully to these learned men of their nation. Even Christ's kinfolk had come begging Him to hold His peace and slip away, avoiding a trial of skill with such antagonists. But He heeded no warning, going on as before, save that His answers to these carping cavilers bear a sternness that is not in the words addressed to His disciples or to His humbler fellow countrymen.

Who is He?

The Jews of that day were full of belief in necromancy. The Pharisees themselves practiced the "black art," and had systems of healing that called for all sorts of superstitious performances. So that a miraculous cure was not in itself anything foreign to the thought of the time. But the power must be either of God or of the devil, and the healing of the deaf and dumb demoniac was such a cure as to startle the beholders into daring thought. "It was never so seen in Israel," they marveled to one another. "May this not be the Messiah, the great King who is to come?" Not so thought the Pharisees. From whom could come this bold Leader who paid no heed to the established order; this Preacher who decried even the rulers in high places; who outdid them even in wonder-working; from whom could He come but from the father of lies, from the devil himself? You can see the people drawing back fearfully, the mothers and fathers holding fast their children as they heard the judgment, "He casteth out devils through the prince of the devils."

It is not easy to keep the connection, so irregularly and swiftly does the narrative run, but here surely is the connection of this scene and debate with the final verses of the passage: If God has help for mankind surely He will show it. He will set it where all can see it, even as a man sets his light not beneath a basket but in the window, whence it shines forth a guide to the dark pathway. And again, if men would walk safely they must keep to the light. If they will bury their eyes in the darkness, their minds in their own desires, then their feet must stumble, and to them will belong that terrible title of those who lead others astray, the "blind leaders of the blind."

"Live and Let Live"

By Ramsey Benson

AMZI figures that starving cities are not good for the farms, and that is why his notions about oleo are not what some might consider strictly orthodox.

"With butter at forty cents a pound and oleo taxed so high it can't be sold for much less," he argues, "a whole lot of city people are going to eat their bread dry. How is farming helped by that? I don't profess to know exactly what oleo is made of, but I have a suspicion that about every blessed thing in it, except maybe a little salt, comes originally from somebody's farm."

"When I was a boy I used to hear a song about the farmer being the man that feeds us all. I guess there's not much doubt about it."

Classes in Plain Sewing

Provide an Elderly Woman with a Comfortable Income

By Mrs. A. V. R. Morris

"PLAIN sewing never seemed to me to be a valuable accomplishment until I realized that the ability to teach it was furnishing me with a comfortable income," said a soft-voiced elderly gentlewoman. "You would be surprised to know how many mothers there are who actually haven't the time—because of business, women's club, or social demands—to teach their daughters to sew and to mend. But if my mother had not taught me everything there is to know about using a needle, I should now be living in an old ladies' home instead of in my own house, with a neat little maid who opens the door for the scores of girls who come here to take sewing lessons.

"The classes—there are two of them six afternoons a week—are in session from one until three and from three-thirty until five-thirty o'clock, respectively. The half-hour lapse between the two sessions is necessary in order that the departing pupils ranging from six to twelve years of age, belonging to the early class, shall not collide with the arriving members of the late class, which is composed of almost grown girls and young women. All of the pupils are entered for a full term of twenty weeks (tuition, fifteen dollars) with the privilege of coming three times weekly, selecting whichever afternoons can most conveniently be sandwiched between the lessons in other accomplishments which they are also mastering. But it is a hard and fast rule that each pupil shall appear promptly at whichever class she attends and remain until the lesson is over. Otherwise there might be constant interruptions, and very little work would be accomplished by anyone.

"Every applicant must furnish credentials from a local clergyman or a physician in good standing, to whom she and

made up of girls, for women of every age join them just for the novelty of the thing. Sometimes a woman will privately engage me to spend one or two mornings a week at her cottage to sew with her daughters and their friends. At these places we don't have any amateur music, but I always insist that somebody shall read aloud because otherwise the girls would do a great deal of talking and scarcely any sewing.

"During the summer weeks I count only upon making enough money to pay my expenses at the seashore, because scarcely half of my time is then taken up, but in the winter there is always a surplus after rent, fuel, food, and housework have been paid for. Teaching of this kind isn't a bit like work. In fact, it's so easy to do and it's so delightful to be almost constantly associated with bright young girls that it is surprising to me that in every country neighborhood and small town some unattached elderly woman has not organized classes for plain sewing and neat mending."

The Burden of Yesterday

[CONTINUED FROM PAGE 18]

watch the good-natured giant throw off his budget of news as they flashed by the occasional lonely shack in the midst of the desert. All afternoon they watched, fascinated by the suggestive struggle and romance of these pioneers holding the desolate outposts of civilization. Sometimes a woman's face appeared in the doorway as the papers fell; or, again, a child's, and a shrill little laugh of joy floated out of them.

Dusk came, suddenly and quickly, and the brakeman rose, tying together his last bundle as he remarked, "Here we come to the last and the loneliest."

Presently a shack loomed out of the dimness, the papers described an arc and thwacked against the shack's doorsill. The door opened and the young man who appeared was Robert!

There was a shout of recognition and a babble of voices as the train speeded along. Ernestine listened in silence to the chorus of praise bestowed on Robert, now that he had ceased to interfere with home affairs. The brief southern twilight rapidly changed to star-spangled darkness, perfumed with the dry, pungent odor of desert air at night.

Finally only she and Kirk were left on the platform together. For a long time neither spoke, then Kirk said softly, implying that she understood what he meant:

"Will you, Ernestine?"

"Kirk dear, I will," she managed to whisper. But the figure far down the track seemed vivid before her and urged her to add, "if you still want me—when—you know that—if—things had been different—I—might have cared for—someone else!"

"Who?" the young fellow wheeled upon her with the surprised exclamation.

She started to evade, then with one of the sudden impulses natural to her she pointed back into the traversed distance and whispered with a little sob, "Robert."

"Robert?"

She nodded; and the floodgates of her confidence once opened she broke down and told him Robert's story.

The following half hour was the hardest of Kirk's life. Before Ernestine had proceeded far he recognized the long-forgotten incident of the cream cakes, distorted and magnified as it had now become.

He faced the temptation that Robert had faced the night of the supper, and he, too, was victorious. He told Ernestine the truth, steeling himself to endure her dumb amazement.

"When the baker came out we both ran, and I never dreamt that, even if the other boy were caught, anything worse than a thrashing would be the consequence—and soon I—forgot all about it. I—didn't mean to—shirk—then, and I—don't—now." He concluded slowly, rising to his feet, "There is something that can be done right away."

With the last words he strode off, only to return ten minutes later, suitcase in hand, as the train steamed into the station of Casa Grande.

"I'll rejoin you at Los Angeles." He explained with the same slow gravity: "I'm going to pay Robert a little visit. Is there any message I can give him, Ernestine?"

"He must hate me for being so unjust," she whispered, unable to say more.

[TO BE CONTINUED]



"I move noiselessly about"

her family are well known, because the members of a sewing class are so intimately associated that the introduction of an undesirable element would ultimately wreck it. In order to be enrolled, a girl or a young woman need not be well-to-do (confidentially, there are several who do not pay anything), but she must be well-bred.

"The first class of five half-grown schoolgirls was easily kept interested and industrious because all were intimate friends and a spirit of good-natured rivalry inspired them to do their best. But as the number of pupils increased, the girls showed a disposition to form themselves into little cliques—of gigglers—and something had to be done to interest all of them equally. Then it was that I organized the junior and senior classes according to age rather than needle proficiency, as some of the eighteen-year-olds could not run a straight seam while many of the twelve-year-olds were expert sewers, and had them entertain one another with vocal and instrumental solos and with recitations. No number on the program ever takes more than ten minutes of the amateur performer's time, and as both classes now number forty members, a girl rarely entertains twice in a week. Meanwhile I move noiselessly about the room, inspecting the work of each pupil, correcting mistakes and whispering encouragement.

"From June until September so many of my regular pupils are spending the vacation period away from their homes that it does not pay me to continue the classes. So, in order to get the benefits of a change of air and of scene, I migrate to the nearest seashore resort, get quarters in some quiet place, and organize weekly sewing classes which meet at the summer homes of the various members. These classes are not entirely

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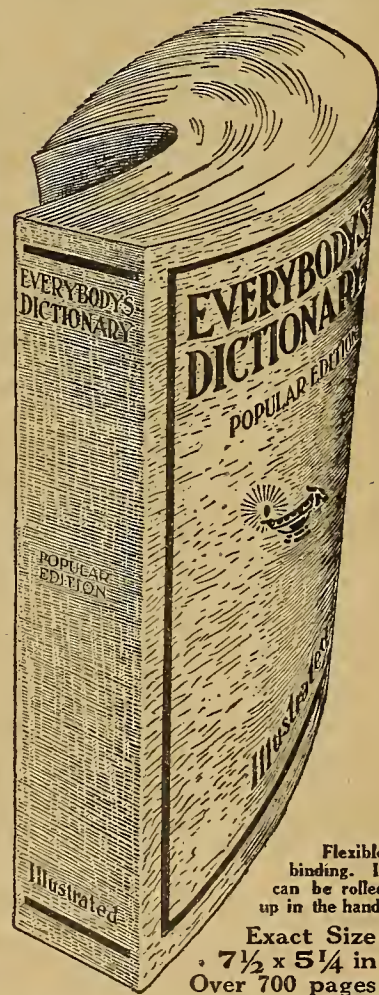
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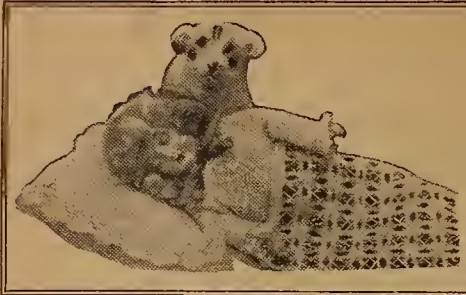
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The Princess Blue-Eyes

By Harry Whittier Frees

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ONCE upon a time, long, long ago, King Golden-Locks and Queen Beautiful ruled over Dollyland. They had one little dolly girl called the Princess Blue-Eyes.

Among all the dolly children of the kingdom there was none quite so pretty as the Princess Blue-Eyes. She had big blue eyes, golden hair, and the sweetest face that any little dolly ever had.

But with all her charming looks no one seemed to like her. For one thing she was very, very proud; for another, she was very, very selfish; and, last but not least, she would never listen to what was told her.

Even the guards of the palace disliked her. She would order them about as

sorrow that the naughty little princess had refused to take the medicine and had even thrown the bottle out of the window.

A short time later a little old woman, wrinkled and gray, called at the palace gates and asked to see the king and queen. The guards were at first for sending her away, but when they learned that she called to see about the princess she was at once taken to the king and queen.

For quite a long time the little old woman talked in secret with the king and queen, and, when she departed, left behind her a little toy dog made out of pink cloth and stuffed with wool. This was to be given to the Princess Blue-Eyes as a present from the little old woman.

It was a long, long time afterward before anyone found out who the little old woman really was. No one thought at the time that she was the fairy god-mother of the little princess and had come in the guise of a little old woman so that no one could tell who she really was. That is, no one knew but the king and queen, and they had promised the little old woman not to tell.

When Princess Blue-Eyes received the little pink dog she carried it up-stairs to her playroom and flung it into the corner.

"There!" she exclaimed, with a pout, "I hope no one ever picks you up, 'cause you're only ugly and woolly!"

And then a wonderful thing happened. It so surprised the princess that she nearly fell over. For the little pink dog immediately sat up in the corner and growled at her!

"Grr-r-r-r!" it went.

"Oh, dear!" cried the princess, "it's alive!"

"'Course I'm alive!" growled the little pink dog. "And you're nothing but a horrid little dolly to try to break one's bones!"

"You haven't got any bones," sniffed the princess, getting over her fright. "You're only made of wool, and if you don't keep quiet," she said crossly, "I'll put you in my dolly's trunk and lock you up!"

"Who cares!" laughed the little pink dog. "I'll crawl out through the keyhole and bite you. I bit you once before, and that's why you are so disagreeable and no one likes you. Anybody I bite becomes proud and selfish."

"You did nothing of the kind!" declared the princess. "'Cause I'd felt it."

"I did it when you were in bed, sound asleep," replied the little pink dog. "You'd be a nice little doll if it hadn't been for me, and if you are not careful I'll do it again and then you'll be still worse."

The princess looked as though she would have liked to shake the little pink dog all to pieces, but he gave such a fierce growl that she backed away and ran from the room after carefully locking the door behind her so that he could not follow.

The day after was the princess' birthday and she expected to get a great many presents, as she had always fared well before. But this time there was nothing for her—not even a box of candy.

She nearly cried her eyes out when her mother told her that it was all due to the little pink dog, and how he had bitten all those who had given her presents before. And now they had become so selfish that they thought of no one but themselves.

Some time later the princess wished for a little pony that she might drive about the palace garden. She went to her father, the king, who had never refused her anything before, and asked him to get her one.

"Just a dear little dapple-gray," she coaxed, "with a long fluffy tail and a

shaggy mane. Please get me one, Papa—please!"

And the little princess threw her arms about her papa's neck and kissed him as she had often done before when she wanted anything. But this time her papa did not promise so readily.

"I would, my dear little Blue-Eyes," he told her fondly, "but I have lately be-



She found the dearest little dapple-gray pony

come very, very selfish. That little pink dog of yours has bitten me, and it will no doubt be a long time before I shall be able to do anything for anyone but myself. If I were you I should try to make friends with the little pink dog, and then perhaps he will stop biting after he finds out that you are no longer selfish and disagreeable."

It was a very miserable little princess who walked slowly up the stairs to her playroom. She intended to ask the little pink dog to forgive her for the way she had treated him.

But when she reached her playroom the little pink dog was nowhere to be found. She searched for him in every nook and corner, and even looked in her dolly's trunk, thinking that he might have crawled inside to hide. But he never showed up again. No one ever found out where he went to but the king and queen and the little old woman, and they never told the princess. Perhaps the little old woman called and got him when no one was around to see.

From that day on there was a wonderful change in the Princess Blue-Eyes. She was no longer the least bit proud or selfish, and all soon learned to love her. Even the guards, who had before disliked her, now lifted her up before them on their horses and galloped about the palace garden like the wind.

And one day she found near the palace gate the dearest little dapple-gray pony hitched to a tiny cart. On the seat lay a card which read: "To a good little doll from the little pink dog."

So that was how the Princess Blue-Eyes knew that even the little pink dog had forgiven her.



The king, queen, and princess of Dollyland

though they were of no more account than her toy tin soldiers. Because she was the daughter of their king they obeyed her, but they wished many and many a time that their little princess was more like her kind-hearted mother, the queen.

The Princess Blue-Eyes at last became so disobedient that even her father and mother, the king and queen, could do nothing with her. They talked to her and scolded her, and even sent her to bed without any supper, but she still remained the same willful little dolly girl.

Finally, King Golden-Locks, in despair, made it known throughout the kingdom that whoever would cure the princess of her proud and selfish ways would receive great honors and riches.

The next day the greatest doctor in the land called at the palace, and, after examining the princess very carefully, left a bottle of medicine that she was to take every hour.

The following day when the great doctor returned, the queen told him with



She carried the little pink dog to her playroom

Corn Lady Letter—By Jessie Field

January 30, 1914.

LITTLE SISTER MINE: These long winter evenings when my boys and girls have plenty of time to read I have been thinking a great deal about my responsibility in getting them interested in reading good things. The other day I asked my big Robert what he read at home in the evenings, and he said, "There isn't anything to read, so I usually just go to bed, except on Saturday nights I go to town." I asked Jessie, my girl who used to stoop over because she was ashamed to be so tall, what she read and she replied eagerly:

"I know a person ought to read books. It's part of education. I earned five dollars myself, picking berries last summer, so I spent some of it for books."

"And what books did you buy," I asked her.

"Well, you see, I saw it advertised that you could get fifteen books for a dollar and a half from New York, and so I ordered them. They are such fine, exciting books," she replied.

"Fifteen books for a dollar and a half!" Poor Jessie! And she was reading these "exciting" books for an education. When I asked her to bring some of the books to school so I could see them, she told me she had read them all and loaned them out to the neighbor girls to read.

Well, you can guess, little sister, that this person, who believes so with all her heart in good books and who has always loved to read them, decided she would have to find a way to bring these young people in touch with the right kind of books. But how should it be done?

I sent right home to Mother for a box

of my own books, and then I began to look around, too, for the resources of our district. I found there were two pretty good libraries, and they were glad to lend some books for us to read if I would be responsible for their care. Then I found Carnegie Library in our nearest town had an extension plan for letting out books to teachers, and I found some of the books we wanted there. Of course we have a small school library, but it is not made up of the kind of books one needs to get country boys started in to loving to read.

I gave Robert "The Call of the Wild" one day, and said, "Robert, here is a great story about a dog. I think the dog in this story must have been almost as intelligent as your Scotch collie. Would you like to read it?"

He took it home. I waited and wondered. He was not a ready reader and often stumbled around in class in a way that made me know he did not interpret what he read at all. In less than a week he came in one morning with the brightest eyes and said, "Gee, it was such an interesting story! I didn't want to go

to bed until I finished reading it." I asked him if he would like to tell the school just a little about it during opening exercises. And he did. He blushed and stumbled somewhat in the telling, but when he was through I knew "The Call of the Wild" would be one of the most popular books in the school that winter.

To Jessie I handed one day, as she was starting home, a copy of "The Girl of the Limberlost."

"You love the out-of-doors, I know," I said to her, "and here's the story of a brave girl who loved the out-of-doors too. And it is really very exciting!" I added, remembering the kind of books she had been reading.

Well, it did not take Jessie long to read through that book, and when she brought it back a new shyness seemed to have come in her eyes as she said:

"Teacher, it was such a good book, and so real, too. It was exciting and interesting as the other books, but somehow it made me better inside when I was through reading it. I am going to tell the other girls about it."



And so we have started, and our little winter reading library has in it these books:

The Girl of the Limberlost.
The Call of the Wild.
Little Women.
Little Men.
The Widow O'Callaghan's Boys.
Sonny.
The Little Shepherd of the Hills.
The Sky Pilot.
Mother.
Pollyanna.
Mary Cary.
Hans Brinker, or the Silver Skates.
Two Little Knights from Kentucky.
Freckles.

They are all very popular and quite the talk of the school. I am only afraid they will be worn out from much reading. But I'm not going to mind if they are. We will just get up a Box Supper and have a program made up of the parts they like best in the books and represent the favorite characters and get some money and buy new books.

But the best of all is that we have a deeper, finer spirit in our school because of their reading, and all of the older boys and girls have bought one or two books to start a library of their own. It has all helped so much I knew you would want to know about it. I've decided it is better to get my pupils to reading good books themselves than it is to read the books to them, as I used to do.

Are you wrapping up well this cold weather? You'd better take good care of yourself, for, you see, there's someone who couldn't get along without you.

Your BIG SISTER.

Clothes for Everyday and Special Days

Blouses with New Frills, a Wrapper for Comfort, a Maternity Dress and Right Clothes for Children

Designs by Grace Margaret Gould



No. 2451—Long-Shouldered Blouse

32 to 42 bust. Material for 36-inch bust, one and five-eighths yards of forty-two-inch material, seven eighths of a yard of contrasting material, five eighths of a yard of all-over lace and three and one-half yards of lace edging. Price of pattern, ten cents



No. 2452—Kimono Blouse: Japanese Collar

32 to 42 bust. Material for 36-inch bust, one and three-eighths yards of forty-five-inch material, one yard of contrasting material, one and one-half yards of lace for frills and seven eighths of a yard of tucking for guimpe. The price of this pattern is ten cents

YOU know, dear FARM AND FIRESIDE reader—don't you?—just how interested I am in your clothes. I have been trying for a very long time to design just the sort of fashions that I felt you would want. You see, I know pretty much what your days are, because so many of you write me confidential letters.

I never design clothes just for anybody. I really design them for you. I know that when you have just the hardest day before you, you don't want to go about your work with a dress that is uncomfortable, and so I've been trying to include in our patterns many practical dresses that will give solid comfort.

I also know that you, just as well as I, want style in your clothes. If you are going to all the trouble of making something new and spending your money for the material, you want to have a stylish garment when it is finished. I do—that's why I know you do too.

Now you take the waists that I designed for this page. The one shown in pattern No. 2452 has that new Japanese collar that everyone is talking about in Paris and New York. Personally, I don't think it is becoming to everybody, but it gives one a sort of comfortable feeling to know one is wearing the latest thing out, and the waist is really very stylish.

If you like it and you need a new waist, you might make it with the Japanese collar and wear it that way for a while and then rip the collar off and finish the waist with a little soft flat frill of lace or a fold of chiffon or satin.

The other waist is extremely stylish too, with its long-shouldered effect and drooping revers.

By the way, I almost forgot to tell you to be sure to notice the box at the top of the page, because in that I have told just the kind of fashions I am planning to show in the next issue (February 14th) of FARM AND FIRESIDE, and the one after that too. I do hope the idea of announcing ahead the style of clothes that will be shown in the coming numbers will be a help to you.—G. M. G.

The fashion page in the February 14th issue of Farm and Fireside will be devoted to designs for children's clothes. There will be underwear and school and party dresses. The February 28th issue will contain a special showing of the first spring fashions. There will be costumes designed for afternoon wear and a number of attractive and yet not too extreme evening dresses both for women and young girls



No. 2180

No. 2460
No. 2461

No. 2180—Belted Wrapper with Long Sleeves

32 to 44 bust. Quantity of material required for 36-inch bust, nine and one-half yards of twenty-seven-inch material, or seven and three-fourths yards of thirty-six-inch material. The collar on this wrapper may be of contrasting material. Price of this pattern, ten cents

No. 2460—Box-Plaited Maternity Waist.

34 to 46 bust. The quantity of material that is required for 36-inch bust is two and five-eighths yards of thirty-six-inch material, or one and three-fourths yards of forty-five-inch material. This model is practical and suitable for wash, wool, and silk fabrics. Pattern, ten cents

No. 2461—Box-Plaited Maternity Skirt

24 to 36 waist. The quantity of material required for 24-inch waist, four yards of thirty-six-inch material, or three yards of forty-five-inch. The width of this skirt at the bottom in 24-inch waist is two and one-half yards. The price of this skirt pattern is ten cents



No. 2415—Boy's Slip-Over Russian Suit

1 to 6 years. Quantity of material for 2 years, three yards of thirty-six-inch material, or one and one-half yards of fifty-four-inch material, with one fourth of a yard of contrasting material. Pattern, ten cents



No. 2416—One-Piece Dress: Long-Waisted Effect

2 to 10 years. Quantity of material required for 6 years, four yards of twenty-seven-inch material, or two yards of forty-two-inch material, with one-fourth yard of thirty-six-inch contrasting material. Pattern, ten cents



Pattern Coupon

Send your order to the nearest of the three following pattern depots:

Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City
Pattern Department, Farm and Fireside, Springfield, Ohio
Pattern Department, Farm and Fireside, 1554 California St., Denver, Colo.

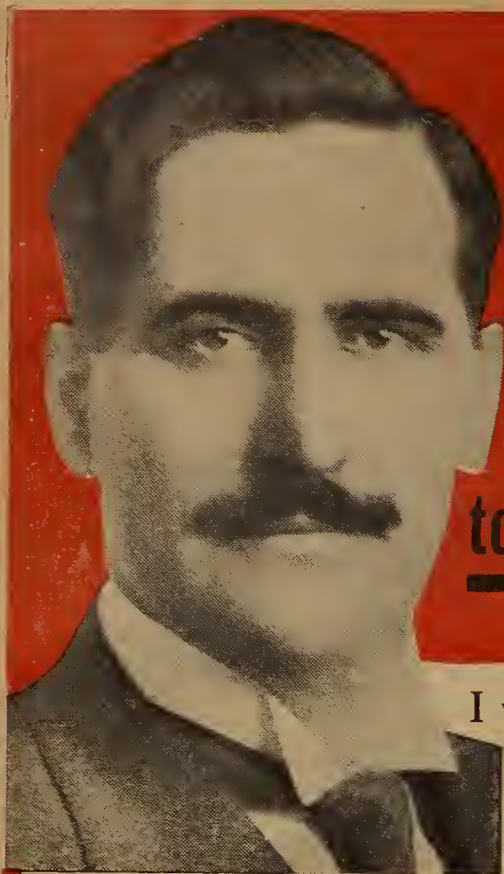
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No.....Size..... No.....Size.....

No.....Size..... No.....Size.....

Name.....

Address.....



I Want Every Reader of Farm and Fireside to Write Me for My Catalogs

Wm. Galloway

I want you—the man who is holding this paper in his hands right now—to write to me right away. I'm making a special appeal to FARM AND FIRESIDE folks. I've got something special to offer every one of you. I know what kind of farmers read this great magazine. They're my kind—the up-to-date, wide-awake kind—the kind I like to do business with.

You know what I've done in the past—saved more money for the farmers of this country and given them a squarer deal than any other manufacturer. That's why I've been able to build up a mammoth business here in so short a time. Now, this year I'm going to break all my own records. And I'm going to do it by putting some special propositions right up to the best farmers in the country. I'm going to make you some offers that are so amazing that you simply can't get away from them. Over one hundred and fifty thousand farmers know by actual experience that

THE ONLY WAY IS THE GALLOWAY

And I want you to be the next one. I want to show you just what a man can do for you when he will sell you direct from his own factories to your farm. I want you to see for yourself what an amazing difference it makes in prices when you don't have to pay one single middleman's profit. Write me—you won't be under the slightest obligation. Just get this wonderful story. I'll show you how you can save hundreds of dollars in the next year alone. I'll give you the evidence—then let you decide. Send me the coupon or a postal or letter right now.

I'm Going to Tell You Some Inside Facts About My Business

I haven't any secrets about my business. The more my farmer friends know about my aims the better I am satisfied. I've made good—but I know that every bit of my success is due to the fact that every single man who does business with me has found that he can trust me absolutely.

I'm a farmer myself—always have been and always will be. I was born and raised on a farm and I know what you're up against when it comes to buying right. Because I've been through the mill myself.

That's why I got into this business. I used to sell farm implements for other people. I didn't keep at it very long because I saw with my own eyes every day, the actual evidence that convinced me that the farmer simply couldn't get a square deal and his money's worth so long as he had to pay a lot of middleman's profits which were always loaded onto the real value of the goods. Why, I could tell you of any number of cases where the profits were so much greater than the real value of the article that it seems almost unbelievable.

I made up my mind to see if the cheaper and better way wasn't to manufacture my own goods—making them just the best that they could be made—and sell them direct to the farmers at actual factory cost with only one very small factory profit added. I started out in a small way because I didn't have much money. But it didn't take long to prove that my faith in the intelligence and buying judgment of the men on the farms was founded on solid rock. My business has been tremendous right from the start. My profits have been small—smaller than almost any other manufacturer in the country. And I'm going to keep 'em that way. I'd rather make a small profit and sell a lot of goods than a big profit on a few goods.

Of course, I've made enemies among the other manufacturers, who tell me I'm "spilling business." I'm sorry because I don't like enemies—but I am working to help you get your goods at a fair price. Naturally the dealers don't like me very well either, for I stand in the way of their big profits. That's why a lot of them have gone out of their way to misrepresent my business. They can't do that very well any longer, now, for I've made a \$50,000.00 Challenge Offer to any man or company in the world who can prove that every word of Galloway's story is not true right down to the last detail, or can disprove that my factories are not exactly as shown, that every statement and claim I make is true. I'll send you a copy of this challenge offer when you write me. Besides that, I protect every single man who does business with me with a \$25,000.00 Cash Guarantee Bond that makes it just as safe for you to do business with Galloway as with the United States Government. Now, I want you to find out just what all this means to you in cold, hard cash. I've enlarged my line tremendously for 1914. I am offering more bargains and bigger bargains than I have ever been able to before. I want you to get the proof for yourself.

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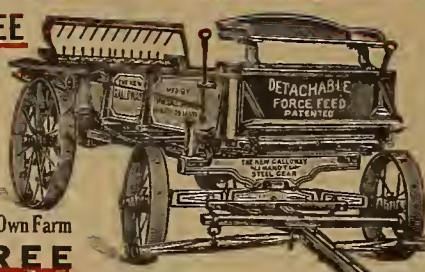
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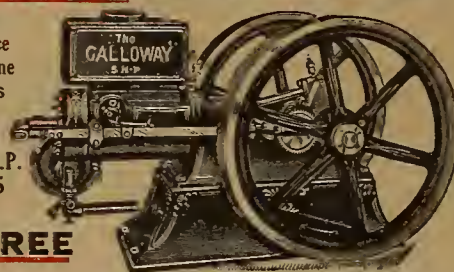


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I'm not even going to try to tell you about the sensational new Galloway Sanitary Separator. I couldn't. It's so far ahead of anything in the separator line that has ever been placed on the market that there is simply no comparison. It's the latest and greatest product of my factories and I am prouder of it than anything I have ever turned out. But I am not going to ask you to take my word or anybody else's word on the separator question. I am going to give you a chance to find out the real facts for yourself.



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I send you one of these wonderful new separators, any size you want, right to your farm for 30, 60 or 90 days' trial absolutely free. I want you to test it out in every way that you can think of. Compare it with any other machine that you know of, no matter what the price. If anybody else is trying to sell you a separator, make them let you take their machine and set it right up by the side of mine. Take the skim milk from one machine and run it through the other—that will tell the story! Then examine its wonderful patented features. See how simple it is—how easy to operate and how easy, very easy, to clean. See how perfectly it is made in every single part. And notice the new improved features that make it the most sanitary separator built.

Take a month, if you want to, or keep it two or even three months if you prefer. Then decide. I won't hurry or bother you in any way. If you think that there is any other separator in the world at any price that you would rather have than the Galloway, just ship it right back to me at my expense. I'll agree right now to pay all the freight both ways so that you won't be out a penny or under the slightest obligation if you decide not to keep the separator after having had the free trial.

If you decide to keep it, I'll guarantee to save you from \$30 to \$50 besides giving you a separator that absolutely has no equal in the world at any price.

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Get my new 1914 Separator Book right away. Pick out the machine you want—tell me and I'll send it to you for three months' use and trial free. You can't possibly take any chances on the kind of an offer I am making you. And you can see for yourself that I must have a wonderful machine to be able to make you that kind of a proposition. Find out. Use the coupon or a postal or letter. Send NOW.

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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

SATURDAY, FEBRUARY 14, 1914

5 CENTS A COPY



Selecting his first love missive

DON'T MISS THESE GOOD THINGS SOON TO COME!

Getting the Best of the Barker

The FARM AND FIRESIDE contest idea is meeting with universal approval. Those who have sent in ideas to these contests know that it takes headwork to make a scarecrow that will work as we would have it work, that it takes headwork to use up the odd pieces about the farm, such as the old horseshoes, and make them serve us in practical ways. And there certainly can be no question in the minds of anyone as to the headwork required to start the balky horse. And yet the mind is equal to the occasion—our readers have proved that fact. In response to our request for methods of starting balky horses we received nearly one hundred different ideas. From these were selected the ones that were the most humane and effective, and they will appear on page 6 of the next issue.

Foul Brood!

What are you going to do about it? You will have to do something if you are trying to keep bees. The subject will be thoroughly discussed in an article by one of the most practical keepers of bees—practical in the real sense of the term: he is making money out of the hives that he keeps.

"The Matted Row for Me"

That is what Thomas Greiner says. And he has grown strawberries for a great many years. For FARM AND FIRESIDE he tells why he has found that particular practice of value to him in his gardening. By diagrams he points to your garden and mine.

"Plan to Save Money"

So says a contributor, and the advice is good. But it is a great deal easier to give advice than to practice it, and particularly on this form of advice. But this contributor gives something definite for the reader to use—advice followed by real live suggestion. If we mentioned what he says we would take away part of the value of the article. So we will ask you to look for the new way to cut down expense.

The Box-Stall Remedy

Have you ever heard of it? We had not until Mr. Buffum put it up to us in just the way he will present the topic to all readers of FARM AND FIRESIDE. You may well look forward for this feature too.

Does Irrigation Farming

appeal to you? It does to many. That is why they farm that way. It appeals to others because they know only enough about it to be curious. FARM AND FIRESIDE is going to publish "The Unpleasant Side of Irrigation," written by a farm woman. Is it pessimistic? No. For the woman thinks enough of the life on her farm to stay there. She enjoys life on an irrigated farm.

New Friends

The season which brings us friends is the best season of all. We have many new and worth-while people to introduce. The first of them is Beriah Sallerby and his housekeeper, who will arrive on February 28th, and make a long visit, we hope, in the hearts of our readers.

Spring at the Gate

In recognition of approaching spring there will be helpful articles in making over garments, and preparing dainty trousseaux at small expense.

Flours Have Temperaments

Home breadmakers will find much needed assistance in their craft in an article entitled, "What is Good Flour?" This article shows that most flours are good if handled in the way which their particular textures demand.

How to Be Alone in a Crowded House

Who does not want sometimes to be still behind a bolted door? Who is not refreshed physically and strengthened morally by occasional hours of solitude? Almost every house holds such a retreat, and Miss Charlotte Bird will tell us where to find it.

For Our Invalids

The sick we have always with us. Let us learn to prepare tempting dishes upon dainty trays.

The Most Important People

FARM AND FIRESIDE thinks fathers and mothers are the most important people in the world—except their children! One mother who made a mistake and learned better will share her experience, and we shall tell some stories about fathers in Kansas who are real fathers.

What the Ledger Proved

The application of business methods to home arts will increase our respect for what women are accomplishing on their husbands' farms. Listen for the voice of the ledger.

WITH THE EDITOR



The Outcry Against High Prices

Our friend Mr. F. S. Lane of Kansas opens his heart to the Editor in some very pithy observations. He says what many another farmer realizes and has not expressed. He raises questions which ought to be answered in the minds of everyone interested in the holding of land. Perhaps some of his own questions will give the viewpoint he holds. Some of his letter will awake a responsive echo in the hearts of farmers everywhere. For instance:

In renewing my subscription I want to say a word to you personally on the Back-to-the-Farm bosh. The farmer knows that every other enterprise depends upon his success, and that he with others engaged in production must produce all wealth. To have so much howl about high cost of living just when we begin to get our due is rather discouraging.

The outcry against the high cost of living is not a bad thing at all, I think. It has resulted in a few spasms like the egg boycott, but it probably did not affect the price of anything—not even eggs. The good it has done is to fix the attention of the world on the cost of distributing the products of the farm. When this waste is cured the farmers will get a part of the saving. The worst thing that can happen to us as producers is to have prices in the cities get so high that people will cease to buy our produce freely. When there's a howl against the high cost of living let's join in, and show where the leaks are between the acres and the eaters.

Good roads won't cure the evil, for the farmer hauls his own crops mostly and does not count he is out for hauling.

I'm afraid Mr. Lane is not quite right in this. Bad roads certainly cut down the farmer's returns, whether he counts that he is "out for hauling" or not. It costs me a third more to haul from my farm than it would if the roads were better. I hire most of my help, and have to count it up. But suppose I did all the hauling myself, would that make any difference? Of course good roads alone won't cure existing evils, but they will help.

Social centers won't help, for the farmer capable of success has the best of company in his flocks and herds and crops and never is lonesome or has any time to spare for that which doesn't yield an income, for he knows there are few fortunes made by actual production. It is by beating the other fellow to it, as the saying is.

The Real Profits of Farming

What Mr. Lane says about the origin of riches in farming is too true. We are apt to mistake wealth got by advance in land values for wealth made in farming. Whether a man gets rich by the advance in land prices in vacant lots in a city, an unimproved farm, or an improved farm which he works, he wins by land speculation, not by farming. This is a very important matter. When we credit to farming only such wealth as is made by production, and credit his advance in land values to real-estate speculation, we shall know more about the real profits of farming.

But I think that Mr. Lane quite mistakes the value of the social center. The social center as a scheme for having a good time is well worth considering, but that is not its real value. The real social center is the getting together for the purpose of talking about things "that ought to be talked about," as one social center song has it. It will result in co-operation. And if we can have a good time doing it, so much the better. The fellows who deal in our labor, talk it over at dinners and luncheons—we can copy their methods of good neighborhood with profit. But let's hear Mr. Lane's remedy.

Take all the water out of the deeds, which are our certificates of stock in the land, and put land back to the government price, with the value of improvements added, which is right and just.

In other words, Mr. Lane believes that what we need is cheap land, not in Canada, or the cut-over stumpy lands of the North and South, but right here in our own neighborhood.

I seem to hear a chorus of sneers and jeers, and condemnation; but I suppose that Mr. Lane would argue that as land is the prime necessity of life the cheaper it is the better. What can be said against that argument?

Would Cheap Land Mean Prosperity?

Mr. Lane doesn't say how he would make lands cheap; but if we could all get cheap lands, shouldn't we all be better off, as farmers? As land speculators, of course we should all go out of business; but as workers, wouldn't it be a great relief to get off our backs the huge burden of dear land? Mr. Lane doesn't tell how to "take the water out of" land values. There is a way to do it—sometimes advocated—and that is to tax it out. One thing which makes land dearer than is good for the business of land-using is the fact that so many people are allowed to hold land without using it, or hold it and only half use it. I don't feel a bit like laughing at Mr. Lane's suggestion that it would be good for the business of producing wealth on farms if the "water" were squeezed out of the price of lands. It may not seem practicable to many of us, but there is good hard thought in it. Says he:

All kinds of improvements will then come, and come easy, and genuine prosperity come to the farmer, the kind that will enable him to work his eight-hour shifts as others demand, and make money to keep him in his old age. He can't do it now and bear his present burden of tax and rent. If he buys at the prevailing price the interest and tax together make him a slave to his business all his life, and he concludes he better go to town and work shorter hours. He sees, and sees plainly, he is to die poor anyway. Why not use his earnings? After it is too late he finds he has jumped from the frying pan into the fire. So squeeze the water out of land and give the ones who need it a chance. There is no advantage if a man wants to use the land in having it priced high.

I think there ought to be a social center in Mr. Lane's neighborhood, and that he should give them a talk on "How High-Priced Land Makes Low Profits in Farming." I'd like to attend.

Robert Snick

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PUBLISHED BY
THE CROWELL PUBLISHING COMPANY
SPRINGFIELD, OHIO

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago, Illinois
Copyright, 1914, by The Crowell Publishing Company
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter

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SUBSCRIPTION PRICE

One Year (26 numbers) 50 cents
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Single Copies, Each . . . 5 cents

Subscriptions and all editorial letters should be sent to the offices at Springfield, Ohio, and letters for the Editor should be marked "Editor."

Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVII. No. 10

Springfield, Ohio, February 14, 1914

PUBLISHED
BI-WEEKLY

Financing the Weak

IT IS announced that Mr. Julius Rosenwald of Chicago, in association with other millionaires, is about to establish a system of banks for the purpose of lending money to that class of borrowers who have been peculiarly the prey of the loan sharks.

To lend to a man who will not pay off the loan is charity, not business. And it would not help the deserving borrower. Unless the proposed banks are based on business principles, they will be merely financial soup kitchens.

The loan shark does not always make big profits. He loans to a class of people who are bad risks, and who have to be watched. At least he thinks so, and a good deal of his so-called interest is really wages of people who shadow his debtors, hound them for payments, and seize and resell their goods. The weakness of the loan shark system probably lies in the fact that every debtor is supposed to be trying to beat the creditor—and under such a system men will try to live up to their reputation. Give a dog a bad name and you hang him. Give a poor man the treatment of a deadbeat, and make him pay interest and commissions based on that theory, and you give him every incentive to be a deadbeat.

There was once a man named Mills who was very rich, and conceived the idea that hotels run for the accommodation of people who could afford to pay only a few cents a day for board and lodgings would alleviate a great deal of human misery. So he built great hotels with small rooms, baths, reading rooms, and many accommodations for such people. These Mills hotels have not only offered shelter and food at rates which were within the reach of the very poor, but they have actually paid interest on the money invested. They give to the man with twenty-five cents a day, in the hearts of great cities, a room and board, and a chance to read and be clean and warm. He can, for that amount, be comfortable for the night.

The benevolence is on a business basis. No doubt Mr. Rosenwald means to make his banks a similar agency for good, and incidentally will realize a small profit. It is to be hoped so. In view of the fact that Mr. Rosenwald's money has been made in the mail-order business, and therefore has been largely made from the trade of the farmers, it is to be hoped that he will try the experiment of establishing some banks in the rural districts, and loaning to farmers who have no assets but their integrity and industry. No class is more in need of credit, or offer safer loans, if the terms are easy and the loans economically justifiable.

A Good Year

WE HAVEN'T grown bumper crops this past year—not in most lines—but we are getting bumper returns from them. The U. S. D. A. has made determinations which show that the cash value of the 1913 farm produce of the United States is greater than ever before in our history. The cash income of the farmers is estimated at \$5,847,000,000 after retaining on the farm what is needed for maintenance. This is twice as much as we produced in 1899—in money value. We must not confuse money value with yield per acre, for the two have no close relation. Neither must we assume that the farmers are better off by the full amount of the increase in cash values; for the rents have increased, and so has the cost of living on farms as elsewhere. But there can be no doubt that the splendid returns from the farms this year is the brightest spot in our national situation. For five years financial conditions all over the world have been getting more and more unsatis-

factory, and this season may be the bottom of the "low." Let us hope so. Fair crops brought us more money than bumper crops would have done, and will go far toward giving a firm basis to business. The grists from the farms will keep the city mills grinding.

Let the Cities Do It

THE article on milk-selling in this issue is a most important one. It goes to the roots of the milk situation. In it the suggestion is made that the distribution of milk to a city must be made by a single agency, and that the city is the proper agency.

There is no way of avoiding this conclusion. And yet, until the cities could attain a broad view of the milk business, they would in all probability do things very annoying and perhaps prejudicial to the milk producers. Perhaps the only way for them to get this broad view is to take on the work of milk-handling as a city monopoly.

How are the cities to protect their monopoly? There are several ways. One simple way is to charge a license to milk peddlers which would force all producers into the city depot. Another would be to place the business of delivering milk under such rigid inspection that only a monopoly would find it possible profitably to operate.

Cities desiring to establish municipal delivery of milk may well study the methods by which Paris, Texas, and some other towns have put out of business all slaughter houses save that owned by the city.

Where the law stands in the way, the city monopoly



In the foreground, on all sides, and stacked against the barn is manure. Someone may have said that the manure pit shown in the last issue was a cheap contrivance—but how much better that method of handling manure is than this one! Some say that manure is worth \$1.00 a ton, some say \$3.00. Both may be right. If the rain from the eaves of the barn is given the right to wash out the fertility, and the chickens and pigs of the barnyard scatter the manure at their pleasure, perhaps fifty cents is a pretty high price. Somehow, and in a pretty definite way, the dollar is associated with quality as well as with quantity; it is well to have both in this case.

could still be set up. A corporation "not for profit" could be formed, with prominent people in control as trustees for the joint benefit of the city and the milk producers, to run the delivery at cost. This is the plan that looks most promising; for it would promise true co-operation between the farmers and the city. And any system which looks to the interest of one party only to the deal will not be a success.

New laws are not always good, but what is wrong with the law recently passed in a Kansas county under which no family owning a dog can receive relief from the Poor Fund? A dog is a luxury, but poor people ought not to be deprived of their simple luxuries because they are poor. But a badly fed and badly kept dog is a pest to the neighborhood.

Nobody Serves the Seller

"THERE is not a single important step or process in the entire cotton handling and marketing scheme which owes its origin to a special consideration of the producer's interest."

Thus says the United States Department of Agriculture after a careful study of the matter. It is not surprising. There is no single step or process in the entire system of marketing any farm product which owes its origin to a consideration of the producer's interest. The Oklahoma cotton market recognizes no grade above middling, though much is sold that is actually better in grade. But how much wheat and corn is sold at grades lower than it deserves? How many millions of bushels of these products are bought unjustly low, and used to grade up that which is poor? The Department says of cotton: "We may say that the farmer sells his cotton subject to comparatively little variation in price in consequence of variation in grade, but that he is subject to a process of averaging to which he is not consciously a party, which is based upon no definite consideration of his rights or interests, and which must inevitably be so adjusted to leave a hidden profit for the buyer."

Hidden profits! That is the bane of the farmer's markets. But where farmers are organized and sell collectively, they are able to fight these matters out, and get the real worth of their produce. Suppose a hundred Oklahoma cotton-planters, or a hundred Ohio wheat-growers, were to offer their produce in bulk to the best bidder, could they not relieve themselves of a part of this burden of injustice? Ask the co-operating dairyman of Wisconsin and Minnesota, or the farmers' elevator men of Iowa, and they will tell you a story of victory.

The best medicine for sheep is a change of pasture. It should be given them before anything is the matter with them.

A Hoary Fraud

THE trouble which the patent-medicine people have had with the Pure Food and Drugs Bureau has stimulated a very old and very insidious fraud. This is the prescription fraud. The reader has possibly seen in a newspaper an advertisement of someone who has a cure for consumption, cancer, or other disease, which he wishes to give away. Perhaps he is a returned missionary who found this wonderful cure in India or Africa. Perhaps he is a person who has been cured and would like to benefit humanity by spreading the glad tidings. Anyhow, he asks the suffering reader to write and he will receive the prescription free of charge.

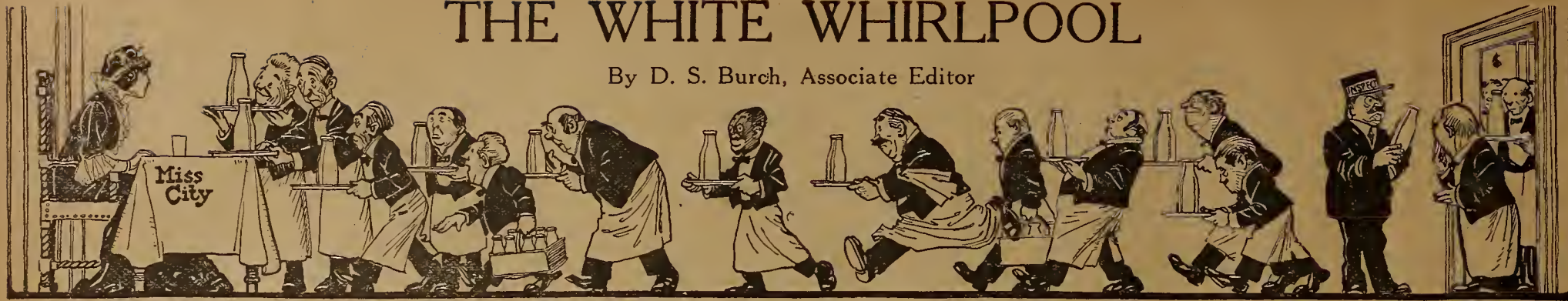
When he gets it he learns that this wonderful cure will certainly heal the disease. He takes the prescription to a drug store and the druggist tells him that some proprietary

or patent dope must be used in it which has to be bought. The returned missionary, or the healed philanthropist—who is really an ordinary patent-medicine faker—is the fellow from whom it must be bought. Or perhaps the circular sent with the prescription insists that the ingredients will cure, but they must be perfectly fresh, which is not the case at the ordinary drug store; or maybe it must be bought at a "botanic" drug store—which does not exist. In that case the victim may buy directly of the "returned missionary" or the "philanthropist."

These people are frauds and nobody should deal with them. They would not operate in this deceitful way if they had any principle. Up to date the Government has not found a way to stop their operations. The only protection lies in public intelligence.

THE WHITE WHIRLPOOL

By D. S. Burch, Associate Editor



"Really this is very nice of you all, but I don't need so many waiters. I could wait on myself"

J. NORMAN LYND.

4. Who's the Best Milk Distributor—the Producer, the Dealer, or the City?

In the three preceding articles of this series, which began January 3d, the dairy business has been compared to a business firm called "Milk Producer & Co." Five of the ten partners in this firm have been considered. The dairy professor and scientist were shown to be guilty of distributing unreliable information, chiefly because of biased opinions. The legislator has been shown to be behind the times in dairy matters, and the incompetent inspector has antagonized the producer. The milk dealer has been diplomatic enough to get along with all of the partners; and the last article showed that the producer got less for producing the milk than the dealer got for distributing it.



SOMETIMES a problem seems to have no established solution and as a last straw we turn to a plan that we know is an experiment. This condition applies to the problem of distributing milk more economically. In few places does the principle of public operation seem to apply so well as in the handling of milk by the city itself. If the distribution of milk is not a monopoly it is a waste, and the only kind of monopoly which ought to be tolerated is municipal monopoly—city ownership.

Most of the Profit is in the Production

Boston, for example, has 215 milk dealers operating 666 wagons which bump over the streets of Boston every day in the year, covering the same territory again and again.

134 firms use 1 wagon each.	1 firm uses 10 wagons.
48 firms use 2 wagons each.	1 firm uses 18 wagons.
11 firms use 3 wagons each.	1 firm uses 25 wagons.
6 firms use 4 wagons each.	1 firm uses 32 wagons.
3 firms use 5 wagons each.	1 firm uses 44 wagons.
2 firms use 6 wagons each.	1 firm uses 47 wagons.
2 firms use 7 wagons each.	1 firm uses 50 wagons.
1 firm uses 6 wagons.	1 firm uses 100 wagons.

The one firm that operates 100 wagons divides its territory—the city covers about 43 square miles—and has a per-quart cost of delivery much lower than the firms in the first column. In addition to milk most large firms sell from their wagons butter, cream, and buttermilk, which is a great convenience to customers.

Milwaukee has 140 dealers. Memphis, Tennessee, has one large milk depot which handles fifteen per cent. of the milk. The remaining eighty-five per cent. is distributed by 180 dairymen. The little city of Manhattan, Kansas, population 6,000, has twelve milk dealers in addition to twenty-five residents who keep one or two cows apiece and sell milk to neighbors.

Of the twelve dealers all but one are producers. So in the smaller towns the producer becomes his own dealer. Whether this is good or bad is a debatable question, but the evidence is all against the producer delivering his own milk economically. Every dairyman who is delivering his own milk and with whom I have discussed the question states that he made most of his profit in milk production, and except when he had a large herd and his business was concentrated along a short route, the delivery of milk was a loss to be paid out of the profits from production.

Neither does the method of delivery have a noticeable effect on the prices. In Stevenson, Alabama, a town of about 600, there is no milk supply except for a few town cows. Milk of doubtful grade is sold as an accommodation to neighbors for ten cents a quart if they go for it. Ten cents is the price it also commands in the near-by cities where it has been inspected, Pasteurized, and delivered in bottles at the consumer's door.

Some One Will Want a Bigger Slice

A co-operative system of milk delivery has for nine years been successfully operated at DeKalb, Illinois. The DeKalb Dairy Company is an organization of producers which we are informed controls about four fifths of the milk supply. The town is divided into four routes and each driver has certain streets. He delivers to nearly every house on the street and the cost of delivery has been cut just about in half. Kalamazoo, Michigan, has a similar system, also operated by the milk producers. In Lawrence, Kansas, one large privately owned creamery and milk plant handles most of the business and gives better service than if competition existed. Those

instances are the only successful ones of their kind we have learned of thus far, but they have actually worked out in practice as well as they look on paper.

The greatest possible objection to them is their instability. As long as everyone is satisfied all is well, but some day some member of the company will want a bigger slice than he is getting, and if he has capital back of him he will either buy the others out or run them out and be a powerful individual milk dealer. In that case he will cause expensive competition.

To attempt the distribution of milk co-operatively in the face of strong competition is a hazardous undertaking. In Topeka, Kansas, for example, dairymen selling milk to city dealers became dissatisfied with the scale of prices and organized the Producers' Creamery Company through which to market their milk and cream. But owing to inexperience, mismanagement, and to the dishonesty of the manager, they failed and went out of business.

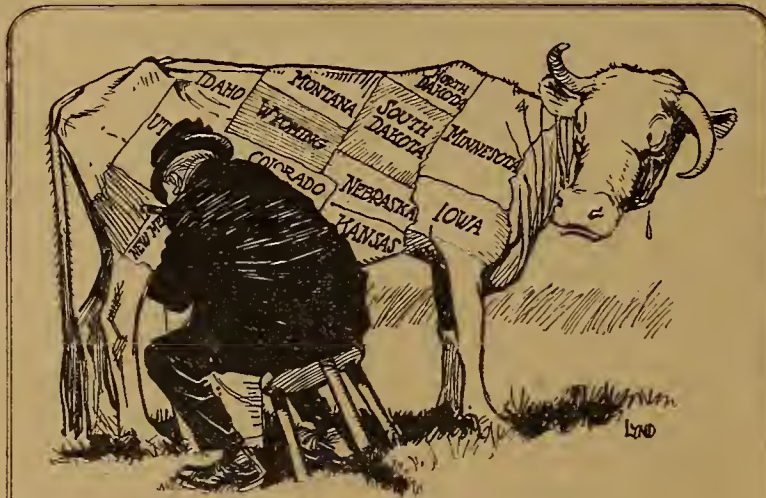
The lesson to be learned from this unfortunate failure is that we walk on thin ice when we try to beat the other fellow at his own game. It is furthermore a game on which information is hard to get except through costly experience.

Most milk plants now make ice cream. The demand for ice cream goes up and down with the weather and public whim, increasing twenty per cent. or more in a day and dropping off as quickly. Some surplus is needed to take care of this trade, and skill in handling this surplus most economically and profitably is a rare business asset. But even when all the rudiments of the science of the game are mastered, competition, armed to the teeth, lies in wait for the newcomer.

The High Cost of Competition

"If," said E. W. Colburn, a New Hampshire dairyman shipping milk to Boston, "we wanted to establish our own routes and distribute our own milk through Boston representatives, we would have a constant and expensive fight on our hands. The influence of the milk contractors with the railroads is such that our milk would be allowed to sour in transit. If we could get the proper service from the railroads the 'trust' would kill us when we came to establishing routes. They would fight us in a dozen ways with their unlimited capital. We have practically no other market than Boston. Plenty of milk is raised around the smaller towns to supply them, and what little is shipped in is controlled by the Boston contractors. About the only thing we can do is to sell to the 'trust' at their own price, or strike. A strike gives us recognition and strength, but we lose money by it."

The problem of permanently reducing the cost of the distribution of milk has therefore no perfect practical solution. Municipal ownership will bring it



THE centralizer insists on milking this cow himself because he will not trust others to milk her dry enough. If bossy were not so good-natured she would hook him, or kick him, or do something to make him give up the job to someone who would take better care of her.

into politics at least to some degree, though with the commission form of city government the objection is reduced. Every strike and every word of dissension, however, between producer and milk dealer is an argument in favor of city control of the milk business.

The average milk bottle in large cities lasts only seven trips, and for every bottle holding milk four

others are in circulation. Some are being washed at the milk plant, some are being brought back empty, and the consumer always has a few on hand. With competition out of the way the enormous loss of bottles through theft and misuse for household purposes would nearly cease. The city would require a guarantee for the return of bottles just as a public library requires a guarantee for books. This would plug one bad leak.

The control of quality could be simplified and improved by having the milk inspected before it was put on the wagons. This would save a great deal of money. Salaries of managers would also be less than under individual management, for the city's money, not individual capital, would be invested.

Money—Butter—Axle Grease

I have the statement from a well-posted milk dealer that a competent manager who would expect a salary of \$10,000 annually if his own money were invested in a milk business could be hired at a guaranteed salary of \$3,000. Stated differently, a \$10,000 man in an individual enterprise corresponds in ability to a \$3,000 man working on a salary. Few cities, and not even the Government, offer many \$3,000 positions, but the comparison is a good thought stimulator for cities which pay dearly for a milk supply wastefully conducted and highly profitable to those who manage the large milk plants. Let available money in the average city become scarce, and that city, if sensible, will discharge its milk dealers and do its own dairy work with no more fuss than a housewife would dismiss her high-priced servants if, through necessity, she were forced to economize on household expenses.

The idea of municipal milk is at present like an egg in the state of incubation under the warmth of public opinion. In time that egg is likely to hatch, but we mustn't count the chicken yet. The question at issue is whether a city shall be served with milk by the producer, by a retinue of milk dealers, or serve itself. I am not very enthusiastic about co-operative milk plants in cities of over 25,000 population, though Los Angeles, California, has a very good one. The producer is likely to be too far away from the milk distributing business to have proper control. Co-operative milk plants are most promising in small towns, but, as said before, that plan is unstable.

Now we come to the milk dealer who would ruin the business—who would kill the goose that lays the golden egg—if there were enough money in it for him. Just a few examples: At the time when the Pasteurization of milk was coming into vogue as a commercial means of reducing surplus and waste in the hands of the dealer, a certain Eastern milk firm backed by ample capital found that to install Pasteurizers would mean a heavy drain on its dividends. In the endeavor to escape this expense the firm hired a prominent magazine writer to write full-page articles for the New York papers, condemning Pasteurization and seeking to create a public sentiment against it.

The manager of a large creamery in Aberdeen, South Dakota, was by various methods of killing competition building up a large trade in butter. But in contrast to the efforts of most creamerymen to put out a first-class product he solicited all grades of cream and readily accepted cream that with competitors would have been considered unfit for buttermaking. In the course of conversation this man frankly admitted, "I don't care whether I make butter or axle grease as long as I make money." The law will never make men of that type into good dairymen. The most we can hope for is that they can be kept out of the business.

The Dairy Dog-in-the-Manger

One of the heaviest burdens carried by dairymen anywhere in the country is the centralized creamery system of the Middle West. The owner of a centralized creamery corresponds exactly to your city milkman. He is a business man and he knows how to get along with the people he has to deal with. He runs his business as well as he knows how; he advertises widely and has stimulated the growth of the dairy business by educational campaigns. His profits have also tempted competitors to enter the same field, which is now being worked for every drop of cream that can be squeezed out of it.

The centralizer, as his name suggests, is one who buys cream anywhere within a radius of about three hundred miles of his creamery and ships to a central creamery where it is churned. Most centralizers have receiving stations where their [CONTINUED ON PAGE 11]

In brief, the question simmers down to, "Who is the best fitted to distribute a city's milk—the producer, a retinue of competing dealers, or the city itself?" The producers who live out in the country are not in a position to do the work economically. The competing dealers who are now doing it are apparently charging too much for their services. The average city is hesitant about undertaking the task, but may be obliged to do so in order to restore harmony, as well as for reasons of economy.

What Are We Going to Do for Fence Posts?

Make Those We Have Last Longer While We Plan and Work for More

By J. A. Ferguson

AN ACRE of land planted to fast-growing forest trees will produce from one to three thousand fence posts in twenty years, and with some species of trees fence posts can be cut in ten years. Why then allow waste land to lie idle? Nearly every farm contains some land that is too poor to grow crops and that is not available for grazing. Planted with forest trees such land can be made to pay for itself by growing fence posts and fuel for use on the farm.

It is not a difficult matter to start a forest planting, and it can be done at little expense. Large trees are not necessary. The best size are one-year-old seedlings which can be grown by the farmer himself. Every farm should have a forest nursery to grow trees for starting forest plantings and for planting about the house and along the roads. A few rows in the vegetable garden make an ideal site for a nursery. Tree seeds planted in such soil will at the end of a year be large enough for starting plantings.

How to Secure and Handle the Seeds

Tree seeds for planting can be purchased from seed dealers at small expense. But in many ways it is better to gather the seed from the trees. Tree seeds that ripen in the spring or early summer, such as elm, silver maple, cottonwood, and willow should be planted at once, for they soon lose their vitality; but tree seeds that ripen in the fall can be kept over winter for spring planting if properly stored. Seeds of ash, birch, catalpa, locust, coffee bean, and those of coniferous trees will retain their vitality if placed in cloth bags and hung up in the barn over winter. Seeds of oak, walnut, butternut, hickory, beech, chestnut, sycamore, box elder, Osage orange, and black cherry, will lose their vitality if allowed to dry out. Such seeds must be stratified or mixed with moist sand in a box and placed where they will be kept moist and cold. Freezing will not injure the seed but will help in cracking open the shells.

The seeds of catalpa, locust, and coffee bean should be removed from the pods before storing, and the husks removed from walnut, butternut, hickory, etc. The fruit of Osage orange and other pulpy fruits should be placed in cold water until they ferment, when the seed can be easily removed from the outer covering and stratified in moist sand.

Tree seeds that are stratified will start more quickly in spring if soaked in warm water for several hours. The seed of locust and coffee bean should be placed in

seedlings should be dug up from the nursery and placed in pails of water to keep the roots moist until planted. They should be planted in rows not more than four to six feet apart. Close planting will cause the trees to grow rapidly in height and prevent the growth of side branches.

Unless the ground is well adapted to growing trees or is very rough, the soil should be carefully prepared before the planting, as for any other crop. The young trees should be cultivated carefully until the crowns begin to shade the ground.

From that time until it becomes necessary to thin out the trees the young plantation will take care of itself.

increase the durability of the wood. A common method is to cover the surface with paint or to saturate the surface with some substance poisonous to the plant life. These surface applications, however, are short-lived. They are easily worn or broken off, exposing the wood beneath and thus permitting the rot-producing fungi to enter.

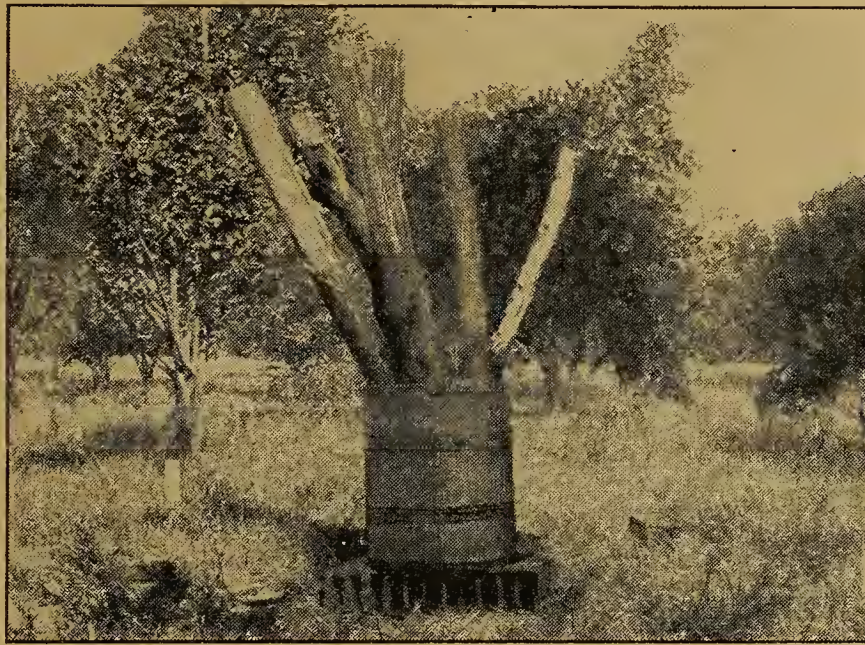
The most effective method is to thoroughly impregnate the outer layers of the wood with some preserving substance. Creosote or dead oil of coal tar is probably the most effective and practical substance for this purpose. Besides being poisonous to the rot-producing fungi, it is an oil and tends to exclude moisture.

The process is a simple one. Thoroughly seasoned posts are heated in a tank of boiling hot creosote for several hours and then allowed to cool down in a tank of cold creosote. When the posts are heated in hot creosote the high temperature causes the air and moisture in the wood to expand so that a portion of the air and moisture is forced out.

A Way to Make Old Wood Serve for Posts

When the posts are then placed in cold creosote the heated air and moisture left in the wood contracts, forming a partial vacuum, and the creosote is forced into the wood by atmospheric pressure, to take the place of the air and moisture forced out in the heating. This forms a shell of creosoted wood from one-fourth inch to two inches in thickness around the post that effectively excludes moisture and prevents the entrance of fungi. The most perishable woods so treated will last many years.

The treatment can be carried out very simply in a single tank such as an old gasoline drum or boiler. The posts are heated for several hours in the hot creosote and left in the tank until the creosote has cooled down sufficiently to produce the penetration desired. This treatment is as effective as where two tanks are used. Care must be taken not to heat the creosote too hot or the posts too long for fear of weakening the wood. Round posts should be used, as heartwood does not absorb the creosote as readily as sapwood. Usually about forty inches of the lower ends of the posts are treated. This will bring the treated portion six or eight inches above the ground when the posts are set. It is at the surface of the ground where the fastest decay takes place. Where it is desired to treat the whole post, as with very perishable wood, the posts can be inverted



Simple but effective creosoting plant made of a discarded steel oil barrel

Such plans as the above statements give, if they are carried out, will help answer the question, "What are we going to do for fence posts?" But the question is worth still more consideration. Let us look at it from another angle.

Cedar, white oak, and locust, long the favorite woods for fence posts because of their great durability, are becoming scarce and their price correspondingly high. This will soon prohibit their use in many regions. Iron and concrete are being substituted for wood to some extent, but their use is not general because of their expense. What are we going to do?

Decay Can Be Prevented

Is there not some way of making the wood that we already have available for posts? Perhaps. In every farmer's woodlot can be found a great variety of woods that could be used for fence posts if they possessed greater durability, such as maple, birch, beech, cottonwood, willow, hickory, and elm. These woods have all the properties essential in a fence post except that they rot quickly in contact with the ground. Can these woods be made to resist decay?

By a preservative treatment the most perishable woods can be made to last longer in the ground than cedar or locust, and it can be done at small expense.



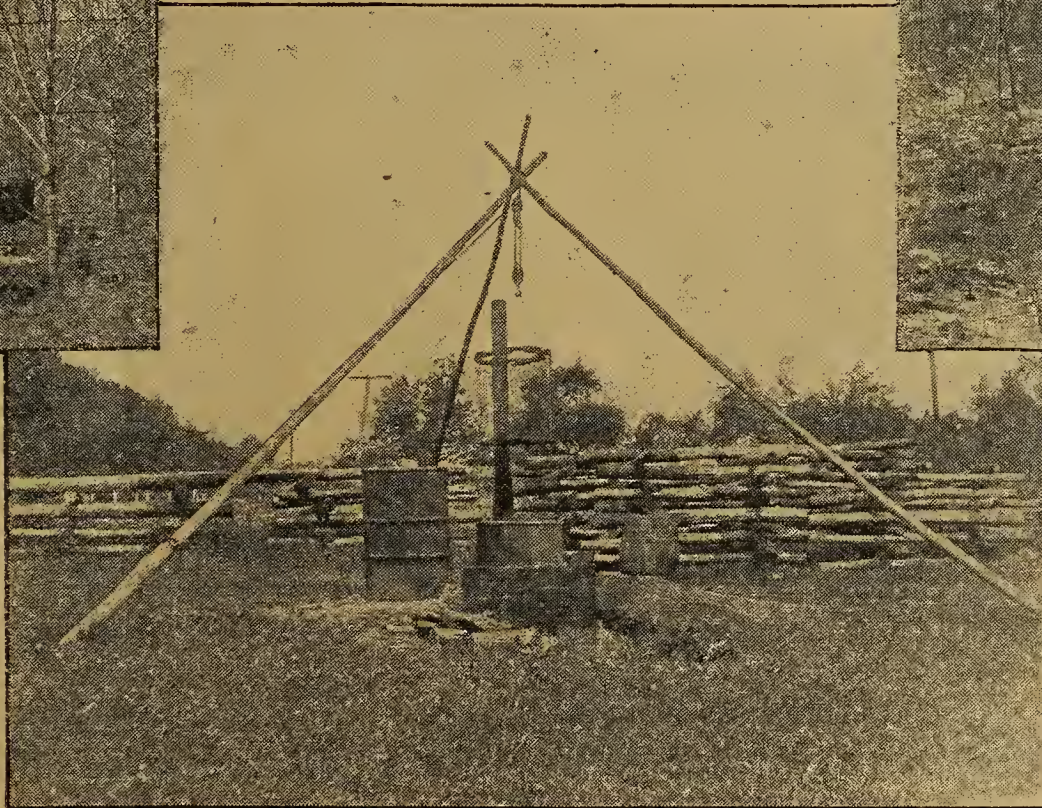
Three-year-old locust plantation raised from seed in farm nursery

boiling hot water and left there until the seed begins to swell noticeably.

Plant in shallow rows in the nursery as early in the spring as possible. The tendency is to plant seeds too deep. Three fourths of an inch to one inch is deep enough for light seeds, and from one and one-half to two inches for oak, walnut, and hickory nut. It is better to plant oak, walnut, and hickory nut at once where it is desired to have the trees grow, for they produce deep taproots that are difficult to transplant.

The kinds of trees to select for planting are those that are suited to the conditions of soil and moisture of the tract to be planted. Trees growing thriftily on situations similar to the one to be planted should be used, but sometimes a tree not native to the region can be found that will produce better results than native trees. Nearly all trees grow well on deep fertile soil, so it is only when a planting is to be made on poor soil that the choice becomes important.

The time to start a forest planting is in the spring as soon as the frost has left the ground. The young



A two-tank creosoting plant made of two discarded gasoline drums. The heating tank is imbedded in brick

Posts that ordinarily last but three to four years can be made to last sixteen to eighteen years and more.

Wood decays because of the action of certain lower forms of plant life called fungi. Gaining entrance to the wood, these plants live on the wood tissue, eating into it and producing what we call rot. Any means by which these fungi can be kept out of wood, or that will destroy them before they can gain entrance, will



Two-year-old catalpa plantation raised from seed in farm nursery

in the tank after one end has been thoroughly treated with the creosote.

Creosote costs from fifteen to twenty cents a gallon in fifty-gallon barrels. A gallon will treat from three to five posts, depending on how readily the wood will absorb the creosote.

The total cost of creosoting posts will depend on the conditions under which the work is done, but at the most the expense will not be great. The work very frequently can be carried out at times of the year when other work on the farm is slack. In so doing, economy of time is practiced. The advantages of a preservative treatment are that it permits the use of wood from the woodlot for fence

posts that otherwise could not be used for that purpose, and permits the use of much smaller posts than are ordinarily used. Large posts are generally selected because they will last longer than smaller ones before decay sets in.

Fence posts that average five inches in diameter are large enough for line posts, and are the best size for the preservative treatment.

My Best Egg-Testing Device

Simple Methods of Telling Freshness and Fertility within Reasonable Certainty

Testing With Pocket Flash

INCUBATING as I do from 30,000 to 50,000 eggs each year, I have been led to seek for the easiest and quickest way of separating the fertile and infertile eggs. The best method I have yet found is by the use of an ordinary pocket electric flash light. The one I use is eight inches long and carries two Mazda dry cells.

To test eggs in the incubator I remove the egg tray from the machine and place it upon a table or the top of the machine, allowing the end of the tray to extend over the front edge of the table as far as possible without danger of its falling. Now when the light is held underneath the egg tray and is moved slowly about from side to side, the infertile eggs and dead germs may be readily seen.

Should there be any egg which appears doubtful, it may be held in the left hand directly against the lens of the flash light, when all doubt will quickly be dispelled.

Eggs set under a hen may be tested one at a time in this way. Testing may be done the fifth day, which is as soon as a satisfactory test can be made by any method, but the seventh day is better.

One advantage of this method, in addition to the ease and rapidity with which the test may be made, is the absence of heat in the light. Where an egg is held against a lamp tester for any length of time the heat from the lamp flame may weaken or even destroy the life of the germ.

LEVI FRENCH.



Fresh egg



Stale egg



Rotten egg

Appearance of eggs when candled before incubation

and after lighting the lamp and closing the door of the tester hold the eggs against the hole in front. An infertile egg will appear clear. If it has become addled, that is when the yolk breaks and mixes with the white, it will have a cloudy appearance. An egg having a live embryo will have a dark spot near the center surrounded by bright red blood vessels.

MRS. GALE BURT.

My Stereoscope Tester



I THINK I have tried every kind of egg tester I have ever heard of, and have found them all unsatisfactory in some respect until I made the one illustrated, which fills the bill. I have never made an error in testing eggs, and can test very rapidly too.

This tester is made of tin and is about eight inches long. It is ten and one-half inches in circumference at one end and tapers to six inches in circumference at the other. The part that is placed to the face is flattened, and is shaped like a stereoscope.

It is bent in slightly to fit the nose, and shuts out all light. Punch holes along the edges at the end so that a soft cloth can be placed over the end and bound to the tin through the holes. This will make the stereoscope fit tighter and will not injure the face. The egg just fits in the small hole, and contents are plainly visible. I always test the eggs on a sunny day, preferably in the morning.

MRS. CHARLES CARROLL.

Practical Fire-Proof Tester

CUT a circle of half-inch pine board seven inches in diameter and cover one side with zinc. This disk is for the top of the tester. The zinc side is the inside. Now cut a piece of zinc twenty-five inches long by fifteen inches wide and bend it in the shape of a cylinder. Tack around the top with small nails and rivet the overlapping edges together.

Next, cut a square hole, three by three inches in size, five inches from the bottom of the cylinder, and have a piece of tough leather large enough to cover this. Fasten the leather over the hole with brass fasteners such as are used for stationery. Cut an oval a little smaller than an egg in this leather, with the large part of the oval at the top. Make several holes in the top of the tester for the heat to escape, and punch several other holes near the bottom of the tester,



for ventilation, on the opposite side from the oval. Screw half a spool into the top of the tester to lift it by, and your tester is complete. It is just the right size for a common lantern to be placed inside. If a large lantern is used the tester would need to be a little larger and higher.

I have used this home-made tester exclusively for a number of seasons for testing out infertile eggs, and it works splendidly. A lantern is safer and heavier than a lamp, but there is little danger, for the tester is fire-proof.

Eggs should not be held before the tester long enough to get overheated.

B. A. PITMAN.

Fertile Eggs Retain Warmth

THE simplest, easiest, and surest way of testing hatching eggs for fertility is to set them in the incubator or under a hen and allow them to incubate for seven days. Then remove the hen, or take the tray out of the incubator, and allow the eggs to cool for ten minutes. Then hold each egg to the cheek. The warm eggs are the fertile eggs and the cold eggs are those that have no chicks in them. Eggs that are only slightly warm have a very weak germ. The longer the eggs are incubated the easier it is to pick out eggs that will hatch.

I have used this method for years and it has never failed. The reason that the eggs with chicks in them retain their heat is that the eggs are alive while the other ones are dead.

GILBERT G. FOX.

A Home-Made Freshometer

AN EGG is slightly heavier than water when fresh, but it gradually becomes lighter with age. In time it will rise to the surface when placed in a vessel of water.

To test the age approximately take an empty pill bottle and cork it up tight. Then wind a wire around the neck of the bottle (B) and bend it downward to form two loops (L), which hold the egg (E). The wire should be slightly springy. Place the egg between the wire loops as shown in the sketch, and put the bottle and the egg in a jar of water. The egg that draws the bottle the lowest in the water is the freshest. If you wish to compare eggs, a paper scale numbered from one to five may be placed in the bottle before it is corked.

G. W. WILLIAMSON.



A Knot-Hole Egg Tester

A KNOT hole a little over one inch in diameter in the sunny side of our barn serves as a very satisfactory egg tester for duck, geese, and hen eggs. With the doors closed and the windows blinded the room is quite dark, and by holding the egg close to the opening when the sun is shining brightly I am able to determine, after five days of incubation, the fertile from the infertile eggs.

M. W. TOBIAS.

A Tumbler Egg Tester

OF ALL simple egg testers the tumbler egg tester is the simplest. Take a wide-bottomed glass tumbler, fill half full with water, and lay the egg in it. The sketches show how the egg may act. If the egg is fresh it will lie flat on the bottom of the tumbler. If it is about three weeks old the big end will be raised slightly above the pointed end. If the egg is three months old it will stand on the small end as shown in the sketch in the lower left-hand corner of the above group, and if older than three months it will rise to the surface. These periods of time refer to eggs which have been kept in a cool place.

Some persons criticize the washing of eggs, or putting them in water, on the ground that it makes them spoil more quickly after they have been wet. This test is most useful, therefore, for eggs that are to be used at home.

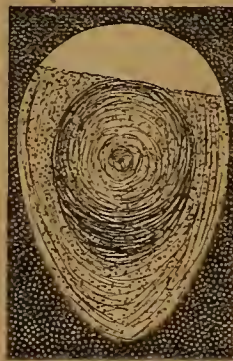
G. SIEBERT.



Dead germ



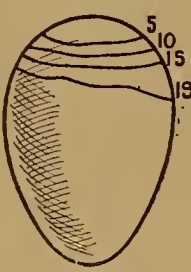
Live germ



Infertile egg

Appearance of eggs when candled after seven days of incubation

A Flat Portable Tester



TAKE a piece of cardboard one foot square and cut a hole the size and shape of an egg in the center of the cardboard. Make the hole the size of a small egg so that eggs will not go through it. Then hold the cardboard in the left hand and the egg in the right. Put the cardboard toward the sunlight if you test by day; if by night, hold toward a common lamp. Holding the egg to the hole, look at the center of it, and if the egg appears clear, or a black spot the size of a pea can be noticed, it is a sure sign the egg is infertile. But if it has a dark spot nearly the size of the yolk of an egg, the egg is fertile. In a white-shelled egg blood veins can be clearly seen projecting from the live germ, but if these veins are broken, or small dots appear, the germ is dead.

You can tell the age of an egg by the air cell. The larger the air cell the older the egg. The different stages of incubation correspond to the lines in the sketch, which indicate approximately the number of days the egg has been incubated. On the nineteenth and twentieth days the air cell is taken up entirely by the living chick.

This tester can be carried under a seat cushion and used when buying eggs from neighbors.

CLARENCE G. MEYER.

Box-and-Lamp Tester



WHEN incubating eggs with a hen you should remove all infertile eggs as soon as they can be distinguished. This gives more room in the nest and prevents the rotten eggs from becoming broken and soiling the fertile eggs. Market eggs ought always to be tested, for one bad egg may mean the loss of a good customer's patronage.

To make an efficient tester procure an ordinary box sixteen inches square and twenty inches high. Set it on one end and make one side into a door as illustrated. Place an ordinary lamp—one with a large base is best—in the box and bore a one and one-fourth inch hole in front of the box on a level with the lamp flame. Tack a piece of dark felt around the hole to place the large end of the egg against. White eggs may be tested on the fifth day after setting, and brown eggs the eighth day.

Take your eggs and the tester into a dark warm room,

My Special \$ Introductory Price Is **DELIVERED**

At last—the most perfect and profitable incubator for farm use. The first practical, all metal, fireproof, everlasting machine ever produced. The first machine of its type with perfect heating and heat distributing system. The first incubator ever produced which enables the farmer to get higher percentage hatches.

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Round Like a Nest. Regulation of heat, ventilation and moisture, all automatic. Wonderful Sheer Water Thermostat Regulator automatically turns lamp flame up and down to meet temperature in egg chamber. Overheating impossible. Uses less oil than any other incubator on earth per dozen eggs hatched.

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These wonderful, sanitary, patented nests (not a trap nest) can't get out of order—last a life time and earn their cost many times over.

Regular price \$3.50, set 6 nests—special introductory price \$3.50, 3 sets (18 nests) \$10. Write for our free catalog. Gal. Steel Brood Coops, Runs, Chicken Feeders, Trap nests, etc. **KNUDSON MANUFACTURING CO., Box 551 St. Joseph, Mo.**

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30 Egg Incubator and Brooder

2

Made of California Redwood, all set up complete, or 180 Egg Incubator and Brooder \$11.50. **FREE** Catalogue describes them. Send for it today or order direct.

WISCONSIN INCUBATOR CO., Box 112, Racine, Wis.

Greatest Cows in the World

Valdessa Scott 2nd.

**Beat
All Ages
All Breeds
of
The World**



Valdessa Scott 2nd.

**The
First
40 Pound
Cow
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The World**

Smashed All Previous Records to Smithereens!

Take off you hat to Valdessa Scott 2nd—the “Wonder Cow” of the world. She certainly is entitled to such recognition. She has more than done herself proud and accomplished a feat **never before** attained by any cow in the world of any breed or age.

In thirty days' test she produced 2933.9 pounds of milk and 165½ pounds of butter. Her one day record is 108.6 pounds of milk and 6 pounds of butter.

Her one week record (7 days) is 695.1 pounds of milk and 41.875 pounds of butter. What do you think of that? Remarkable! Phenomenal! Unparalleled! Her milk tested 4.70 per cent butter fat.

All of the above tests were conducted by W. D. Golding and Prof. Alfred S. Cook of the New Jersey Experiment Station. Naturally you wonder—what sort of ration was fed. Here are the words of her owner—he tells in a letter just received.

Finderne Stock Farm, Finderne, N. J.

THE QUAKER OATS CO., Chicago, Ill.

Gentlemen: During the past two or three years we have been feeding your SCHUMACHER FEED and have secured splendid results. SCHUMACHER was incorporated in the ration fed Valdessa Scott 2nd during her wonderful result-producing test. Used as a base with a good protein concentrate it is a winner. Yours truly, B. MEYER, Owner.

SCHUMACHER FEED

Now read what the owners of other World's Champion and World's Record Breaking cows have to say of this wonderful feed.

Springvale Stock Farm—Home of Colantha 4th's Johanna

THE QUAKER OATS CO., Chicago, Ill.

Gentlemen:—Replying to yours of the 3rd, we are making Schumacher Feed one-third part of our herd ration and we are getting results. Several of our cows are milking up to over 75 lbs per day with this part of our grain ration. Yours very truly, Rosendale, Wis.

W. J. GILLET.

Brookline Farms—Home of Johanna DeKol Van Beers.

THE QUAKER OATS COMPANY, Chicago, Ill. Hampshire, Ill., Dec. 8, 1913. Gentlemen:—Replying to yours of December 1st, regarding Schumacher Stock Feed, will say as a feed for dairy cows or young cattle I know of no feed equal to Schumacher. It certainly contains all the ingredients that are necessary to put the finish and gloss on an animal and more than that, the results obtained through the pail makes it the cheapest feed that I have ever fed. To any one feeding cattle for show, I would especially recommend Schumacher. Johanna DeKol Van Beers, the forty pound cow and her son Johanna McKinley Segis; Pontiac Korndyke Maid, A. R. O. 33.75; Belle Segis, A. R. O. 32 lbs.; in fact, all of my cows, and I have ten with records above 80 lbs. in 7 days, are fed every day a ration of Schumacher Stock Feed. My advice in a few words is, “Buy Schumacher and grow fat and slick.” Yours truly, T. E. GETZELMAN, Proprietor.



Colantha 4th's Johanna

Owned by W. J. Gillett, Rosendale, Wis.

is the champion long-distance cow of the world. Her official record for 365 days is 27432.5 pounds of milk, and 998.26 pounds of butter fat.

SCHUMACHER FEED is composed of finely ground, kiln-dried corn, oats, barley and wheat products, giving just the variety, balance and appetizing flavor which your cows relish so keenly. They will lick it up greedily, digest it easily and won't get “off feed” as they do on rations that do not have this necessary variety. For heavy, steady milk production without injury to the cow, the following Schumacher Feeding Plan has no equal. A trial quickly proves our claims.

Try This Feeding Plan NOW

Mix three parts of Schumacher with one part of any good high protein concentrate you are now feeding, such as Gluten, Cottonseed Meal, Distillers' Grains, Oat Meal, Malt Sprouts, Blue Ribbon Dairy Feed—and note the results. You will be surprised at the increased yield—how eagerly your cows eat it and thrive on it—how their condition improves. It affords that much needed variety of grain products which you know are so essential and also that **Stamina** so necessary to withstand “forced” or heavy milk strain. There's nothing like it—nothing can touch it for results and condition.



JOHANNA DEKOL VAN BEERS

The Second 40-lb. Cow—and her smashing 60, 90 and 100 day tests

	MILK	BUTTER
60 days	5,552.00 lbs.	290.00 lbs.
90 days	8,147.90 lbs.	418.43 lbs.
100 days	8,987.40 lbs.	469.19 lbs.
120 days	10,490.00 lbs.	540.97 lbs.
7 day Record	695.10 lbs.	40.82 lbs.

Here is Your Opportunity

Never since you started in the dairy business have you had a better opportunity to make big money from your cows. Conditions are especially favorable right now. Crowd your dairy to the limit—coin money while you can. Milk prices are good—feed prices are low, especially if you follow the Schumacher Feeding Plan endorsed by the owner of Valdessa Scott 2nd and other successful dairymen. Try it now. See for yourself how it will increase your milk yield and cut down the cost of your feed. Order Schumacher at your dealers' today. Don't put it off.

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THE POSTAL LIFE is the only Company that opens its doors to the public so that those desiring sound insurance-protection at low cost can deal directly for it, either personally or by correspondence.

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- Second: Old-line legal reserve insurance—not fraternal or assessment.
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Poultry-Raising

When Prices are High

TO GET the best prices for eggs, have them to sell in December and January. Chickens are highest in May and June. Butter rises and falls with eggs, and that sold in December and January brings the best prices. Potatoes reach their highest about August 1st, and fall like a rocket every day after. Of course all these things are highest when we haven't got 'em, but it's the business of every one of us to try to have 'em when the price is high, if we can. The above statements are true almost every year. Sometimes there's an exceptional year, however.

Runs for Small Chickens

By Frank E. Drumm

I HAVE read considerable regarding feeding, housing, and the making of runs for small chickens, but most of the articles I have read regarding the construction of runs make them either too cumbersome or too expensive, and as I wished to raise about one hundred and fifty chickens last season I determined to make runs that would be cheap and at the same time light-weight, durable, and sightly.

The dimensions of my runs are 5 feet long, 2 feet wide, and 18 inches high.

I first secured a board 16 feet long, 8 inches wide, and 1 inch thick, and had it slit into four 2-inch strips. Two of these strips I cut into two 5-foot, two 2-foot, and one 18-inch pieces with mitered ends. And one strip I cut into two 5-foot and four 18-inch pieces with mitered ends, using the miter box and turning strip over each time, thus eliminating any waste on mitering. I assembled these pieces as

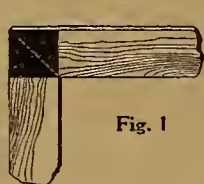


Fig. 1

in Fig. 1 (the reverse side is shown in Fig. 2), using square and oblong pieces of galvanized iron roofing. Wire shingle nails were driven through a and clinched. The results derived are just as satisfactory as if I had used 2x2-inch stuff and mortised the corners; in fact, more satisfactory, as they are lighter and do not buckle or twist.

I then got seven feet of 30-inch (1-inch mesh) galvanized wire and cut it into two strips 15 inches wide for the south side and east ends. On the north side I use burlap, which keeps off the cold winds, and on the west ends I put my coops 2x2 feet square, and 2 feet high in front and 20 inches in the back, with no bottom, which I fill up to a depth of 3 inches with planing-mill shavings. Across the front I put a board, only from top of run to the roof. For top of run I use table oilcloth, which keeps out the rain, allowing the chicks to work in the run during rainy weather. It also reflects the sun so that the runs are comfortable on the hottest days.

The sides and ends of these runs are put together with 3-inch brads, which are easily pulled, allowing me to stack ten or fifteen runs in a small space. These runs will raise twenty chicks to six weeks old, or ten chicks to three months of age, and five to maturity.



Fig. 2

Three boards make strips for four runs and cost 40c each\$1.20
14 feet of 30-inch 1-inch mesh53
6 yards of 36-inch table oilcloth60
16 feet of ½-inch lumber for one coop, about 30c each 1.20
4 coops, galvanized pieces 2x2 and 1x2 and staples35
Burlap can be secured at furniture stores for little or nothing.
Or about 9 cents per run and coop.

\$3.88

Where Ignorance Isn't Bliss

By Anna W. Gallagher

EARLY chicks are no harder to raise than late ones if they get an equal chance. Hen-hatched chicks are nearly always normal if there is nothing wrong with the parent stock. A good many deformed chicks are hatched in incubators by careless operators who usually try to give the machine the blame.

If the temperature in the egg chamber is not kept normal the chicks will not be normal. We learned this years ago by costly experience. We bought a 240-egg incubator, one of the best on the market. It was placed in an outbuilding for lack of a more suitable place, the cellar being damp and dark. The weather changed suddenly one night. The north wind began to blow and the temperature in the egg chamber went down to 84 degrees. This happened during the first week. We did not expect to hatch a chick. We got 104 chicks out of 220 fertile eggs. There were six crippled chicks and ten that were so weak they died soon after being hatched.

This was bad enough, but not so bad as it would have been if the hatching process had been farther advanced. We must confess that this was caused by ignorance. While the incubator had nothing to do with the unfortunate occurrence, we were later convinced that two machines holding 100 eggs each would have been easier for us to manage in many different ways, and would have given better results after we had learned how to hatch chicks.

The next blunder was made with an outdoor brooder. No additional shelter was provided. The chicks got along very well while the weather was good, but when it was bad they had to be kept in the brooder all the time. The brooder was overcrowded after the chicks began to grow, although there was less than half of the number in it that it was intended to hold. We were unable to ventilate the brooder sufficiently without leaving the door open a little. Of course this caused the chicks to huddle together. Several were smothered to death, while others were badly stunted. They had no lice, but they could not thrive for various reasons. Lack of exercise was one. Before another hatching season came around we had a brooder house built.

This house, besides being a very good place for young chicks, is also suitable as an incubator house, although we have not been obliged to use it for that purpose. It is equipped with a roof ventilator, and covered outside with tarred sheathing, which makes it very snug. This sheathing is not at all expensive. All of the windows are on the south side, near the floor, and fitted with wire screens made of half-inch netting. This is very convenient. When the young chicks get well started and the weather gets mild the windows are left open part of the time. We believe in plenty of fresh air as well as exercise for chicks. The floor is kept covered with clean litter, cut straw, etc. We find it a good plan to cover the brooder floors with heavy paper. It is easily removed and burned when soiled.

When chicks are kept confined they must be provided with animal food and green stuff along with their grain ration. After they are well feathered they are turned out of doors every day when the weather is good.

Keeping Poultry Comfortable

By E. I. Farrington

MANY people plan their poultry plants with the one idea of making them comfortable in winter. They overlook the fact that a fowl suffers as much, if not more, from heat as from cold. If the hens could talk they probably would have much to say about the value of houses which are cool in summer.

Houses which are low at the back, where the roosts are placed, are likely to be hot on midsummer nights, even though the windows be open or removed. When this is the case it is a simple matter to apply a remedy. If openings are cut in the rear wall just under the roof, they will give a cross current of air, improve the ventilation, and make the roosting birds much more comfortable. These openings should be provided with shutters so that they may be closed when the weather is cold and damp.

The poultry needs shade in the yards, too, both the mature stock and the growing chicks. It is the same with ducks; they must have shade in hot weather if they are to thrive. If there is no natural shade, hurlap may be tacked to a light frame and placed in a corner of the yard; but it is much better to have something green growing which will furnish the needed shade

E-W

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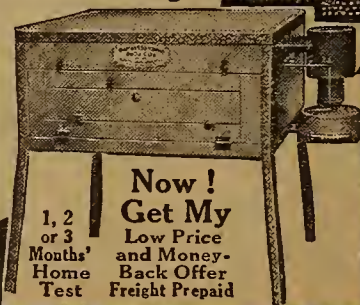
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Why not some sunflowers for shade?

nook. It is a common custom to plant fruit trees when the yards are extensive, and probably plum and apple trees are the best for this purpose. Peach trees grow rapidly and soon provide shade, but the fruit is likely to be soft and of poor quality. Plums and apples are the ideal trees for the poultry yard. The former especially grow lustily in such a situation, and bear heavily. Likewise, the chickens aid in keeping the curculio in check. If the trees are jarred several mornings in succession the pests will fall to the ground and be devoured before they get back.

Dwarf apple trees, or standards with a spreading habit and headed low, give ample shade, and bear well if some potash and phosphate is given the soil to balance the poultry manure, which is overrich in nitrogen. It may be necessary to wrap the trunks of young trees with burlap in order to protect them from the chickens.

Trees are good for shade, but many people have to do without them. In such cases it is well to plant something which will grow quickly but not be eaten by the birds. Sunflowers are favorites with some people, and if grown thickly just outside the yard they will provide plenty of shade. Also, the seeds will be greatly relished by the fowls and may be given to them to advantage at moulting time. The large old-fashioned sunflowers are the kind to grow, rather than the new and more ornamental sorts.

In a Pennsylvania bulletin, Theo Wittman advocates the use of Jerusalem artichokes for shade. They grow rampantly and seed themselves, coming up year after year, so that when once started they may be counted upon to give shade in abundance. The artichokes may be grown in the yards if protected until they get a good start. The birds will not eat the leaves, even though no other green stuff be available. The blossoms resemble sunflowers and the tubers are much relished by hogs. The amateur can well afford to experiment with artichokes as a means of shade.

Sometimes it is better to grow vines over the yard. I know of one plant where climbing roses are trained over the pens and run riot in summer. Not only do they give



Beauty and shade result when vines are grown over the poultry-yard fence

shade, but they make a beautiful picture as well, although the hens probably do not appreciate that fact. Annual vines may be grown in the same way. In soil which is made very rich the nasturtium will make a rank growth and produce but few flowers. The leaves form a dense screen. Perennial climbers like Dutchman's Pipe will need but little attention when once started. It is not a difficult matter to supply shade of some sort for the poultry.

The Right Feed for Poultry

THERE are certain cardinal principles of feeding which are of general application. Fowls need plenty of the right kind of feeds to maintain their vital forces and provide for the production of eggs. Poultry are like human beings—they require a change of feed sometimes. While a balanced ration is not easily determined, experience goes a long way in fixing upon a method of feeding which brings the best results under each poultryman's conditions. On the other hand, growing chickens need sufficient of the right kinds of feeds to provide for at least normal development. A chick newly hatched weighs about one and one-half ounces; when about ten or twelve weeks old, chickens of the heavier breeds of fowls should weigh about two pounds if they are of strong constitution and have been properly fed.

To obtain proper results with laying hens or growing chickens it is important that they receive intelligent care and systematic

E-W

and liberal feeding. This is more than half the problem in profitable poultry-keeping. But if these principles of feeding are disregarded, fowls do not lay as they should and, possibly, do not lay more than enough eggs to pay for their feed, while the development of young chickens is not only below normal but their vitality runs down with consequences that are frequently fatal. Too much corn in hot weather is injurious to laying hens and to chickens. J. B. M.

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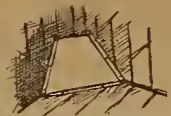


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No Packed Corners

By Guy Swan



EVERYONE who raises chickens by hand in lots of more than twenty knows by experience the danger of their piling up in a corner and smothering the under ones. We tack pieces of large paper boxes across the corners where the chicks huddle, and pack straw against the paper.

Hatching Duck Eggs

By A. E. Vandervort

"HOW do you handle duck eggs in an incubator? I have had good success in hatching hens' eggs, but do not know anything about ducks." This question comes from a reader in the State of Washington.

First the eggs must be from strong, healthy breeding stock. Ducks' eggs require twenty-eight days or four weeks to incubate. They usually begin to pip the shells on the twenty-seventh day, and on the following morning they should be coming out quite lively and should be out by the evening of the twenty-eighth day. You will observe that they are unlike chickens, who come out of the shells very soon after they are pipped. Sometimes ducklings will break the shells twenty-four hours before they hatch out.

When hatching duck eggs in an incubator I keep the temperature as near 103 degrees as possible, turning the eggs twice a day and allowing them to air or cool once a day till they feel quite cool to the touch but warm when applied to the cheek. The lamp should be trimmed and filled each night. After the twenty-sixth day they will need no more turning. When they begin to pip the shells allow the temperature to rise to 104 or 105 degrees, but no higher. The increased heat will help to liberate the ducklings. I have found it a very good plan to sprinkle the eggs thoroughly with lukewarm water when the eggs are turned last. This insures any possibility of the ducklings drying in the shell.

Let the ducklings remain in the incubator from twelve to twenty-four hours after hatching. This gives them time to get thoroughly dried off. When they become strong on their feet remove to the brooder, which should be heated to about 90 degrees. Keep the temperature at 90 degrees for the first week, then it may be gradually lowered about five degrees each week. After the fourth week they will need no artificial heat unless in very early spring. Place the brooder where they can get the sun's rays.

My first feed is fine sharp sand and lukewarm water. This supplies them with grit and gets their digestive organs in good condition to receive their first food, which consists of a mixture of one part corn meal, one part middlings, two parts wheat bran, and about one-tenth part sharp sand, fine oyster shells, or chicken grit. Mix this with sweet milk or warm water until the food is well moistened but not sloppy. Feed this ration four or five times a day for the first three weeks, after which meat, meal, or beef scrap may be added. They may then be given some whole grain, wheat, and cracked corn about once a day. Also keep them well supplied with green food in some form. They will need no water to swim in, just enough for them to immerse their heads. Keep it clean and fresh. Supply them with plenty of shade. Feed well but don't overfeed.

Rubber-Legged Egg Tester

By W. E. Webb

TO TELL the fertility of eggs I select a cock with glossy plumage, one that stands with his feet wide apart, walks as if his legs were made of rubber, holds his head erect, crows loud enough to wake everything on the place at midnight, and acts as though the whole place, with all that is on it, belongs to him.

I put him with a dozen well-fed hens. The eggs will hatch every time. If I want infertile eggs I eliminate the cock.

To know the age of eggs, every evening after the hens have quit laying for that day I gather all the eggs and on them write the date. Then afterward, by looking at the date on an egg, I can tell how old it is.

Testing in the Night Watches

By Charles C. Talmage

I FIND it is money in my pocket to test not only the incubator eggs but the hens' sittings. It takes me but a half hour of an evening to go through a half-dozen hens' sittings. Slipping my hands under the hen, one at a time I place the eggs in a basket. My tester stands on a small box beside me. Having two baskets, I test from one to the other, then place them quickly under the hen.

I can test two hundred from the tray of the incubator in fifteen to twenty minutes when I take the tray out to air eggs about 7 P. M. I immediately test the eggs, placing them in a basket and then replacing the good ones back into the tray, then back into machine. In this way they get a good airing without becoming cold.

I test all eggs on the fifth day after sitting. In looking at them through the tester all infertile eggs will appear perfectly clear and white. When broken open the yolk will not break, although it will be a little enlarged. These are as good to eat as a new-laid egg. In those that the germ has started and died will appear a small streak of blood, sometimes encircling the entire egg. A black spot is sometimes seen sticking to the shell on the inside. If this spot stands still when egg is shaken the germ is dead.

Eggs with very strong live germs in them will appear (when lying flat on tester or rolled around between thumb and finger) to have a floating black spot with many small blood vessels branching out in all directions much like a spider web.

Stale eggs shaken by the hand sound like water in a glass, and appear clear when viewed through tester.

Eggs in which germs have died I boil hard, grind, and feed to new-hatched chicks.

A Cheap Meat for Poultry

By J. D. Yancey

POULTRY to do well must have meat. Especially is this true of laying hens. I was puzzled for a long time to fill this need economically. I cannot depend upon a regular supply from the local butcher shop, and freight rates are almost prohibitive on such commodities shipped in from a distance.

But all over this Western country there is a pest known as the jack rabbit. In some sections where the country is not thickly settled jack rabbits are so plentiful as to be a serious menace to agriculture unless farms are fenced rabbit-proof. For this reason everybody shoots the jack rabbit on sight, but because one is found occasionally that it is unfit for food very few people eat any.

I always thought it a shameful waste to throw away so much meat, and finally I hit upon the plan of feeding them to my hens. The hide and entrails are removed and the flesh chopped fine with a hatchet. When I don't have time to chop the carcasses, I just nail them to a wall where the hens can reach them.

Since discovering that chickens are so fond of the flesh I consider that the jack rabbit is no longer a curse but a blessing, and I keep a dozen steel traps (No. 1½) set for them in their runways through the sage brush and juniper thickets. As none of the traps are far from the house I can visit them each morning before breakfast, and I usually secure one or two large jacks.

When making a set I dig a trench in the runway to fit the trap, so it will just come flush with surface of the ground when placed therein. Then I cut a piece of paper barely large enough to cover the trap. This paper is placed and covered lightly with very fine earth. Results follow.

ONE is never too old to build for the future.

Packing Eggs to Ship

By L. H. Cobb

LAST year I received from a breeder three sittings of eggs packed in two market baskets, each egg wrapped in a mass of excelsior. Now those eggs came through all right, but I paid more than double the express on them I would have needed to pay had he considered my rights when packing them. I have shipped hundreds of eggs packed just as securely and in such a manner as to make the expense as light as possible on the purchaser.

Never ship by express in two packages if you can pack in one. The express rates on two packages of the same weight will be almost double what it would be on one package of the combined weight of the two, especially if they weigh less than twenty pounds. An egg case with a handle on it, holding twelve dozen, will be banded as carefully as a market basket holding a dozen or two, and there is even less danger to the eggs if they have been properly packed.

I use a folding wooden case made of slats of a tough wood, and paper cartons holding a dozen eggs each. The case will hold twelve of the cartons. Be sure you get the long narrow cartons that hold two rows of six eggs each, for the cartons holding three rows of four eggs each will not fit in the case. I take a roll of cotton batting and cut it into squares just large enough so that when the small end of an egg is pressed into the center and down into the little compartment in the carton the corners will just cover the top of the egg nicely. When I pack the cartons in the case I use as much cloth or paper around them as I can to prevent shifting and modify any sudden jar the case may receive. The card on the case and my letter to the patron calls for the return of the case, cartons, and cotton. It cost me ten cents return charges on each case last year, and I sent some of them as far as three hundred miles. One case has made more than a dozen trips and is still no worse for wear, though the cartons are pretty well used up and the cotton had to be replenished every three or four trips.

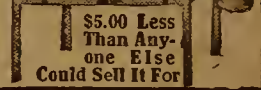
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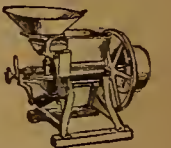
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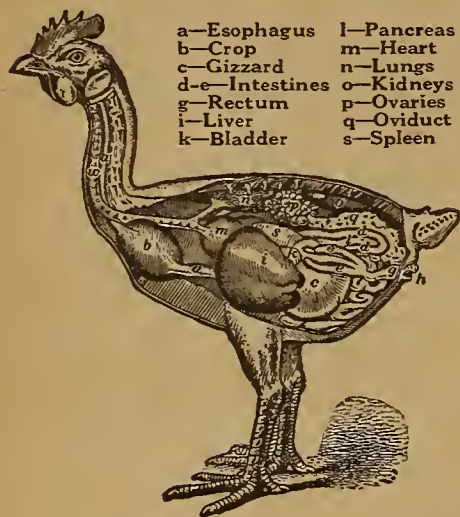
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When less than five or six settings are to be sent, even though they are to go by express, I prefer to use parcel-post shipping boxes. I buy a good one with two thicknesses of double-faced corrugated board all around the eggs and corrugated partitions on the inside at a cost of about three cents per dozen eggs, the smaller sizes costing a little more and the larger a little less. They come in one, two, three, and four dozen sizes. I pack the eggs in these just the same as in the other cartons, but the compartments are larger and the cotton makes a softer bed for them, though it takes more of it. A four-dozen case weighs two pounds unpacked and about eight pounds when ready to ship. In the first and second zones it has been costing me twelve or thirteen cents to send by parcel post, and six cents to return the case. But the rates are changing all the time.

Parcel Post for Shipping Eggs

It is important to use extreme care in handling eggs for setting, especially early in the season. Gather the eggs often, and keep in a cool room. The parcel-post four-dozen-size egg box is ideal for keeping them in, for you can turn them by turning the box, as it is almost as high as it is wide, and can easily be made to rest secure on any side or end. The double thicknesses of corrugated board prevent any quick changes of temperature, and they are all ready to ship if you put the cotton around them as you gather them.

Several of those to whom I sent eggs asked me where I obtained my cases and cartons. I bought them of a large mail-order house. All mail-order houses handle them. The handy folding case costs twenty-five cents and holds twelve dozen. It has regular case fillers that come with it, but I do not use them, preferring the cartons, which cost a cent apiece. Parcel-post boxes can be obtained of the same mail-order houses.

IF THE parcel post is to me made the poultry success it should be, we ought to develop a hen which will lay eggs in half-dozen lots. The fowl may then be sent by post and returned empty.

Two Cross-Bred World-Beaters

THE world champion layers here pictured were briefly described in the January 31st issue of FARM AND FIRESIDE by Prof. James Dryden, in charge of the Oregon Station poultry experiment work.

These hens in appearance would pass for rather ordinary bred-to-lay White Leghorn stock. They descended from a cross of Barred Rock and White Leghorn, the proportion being about one eighth Barred Rock and seven eighths White Leghorn. But all experienced stock-breeders know that where selective breeding is practiced from a given foundation stock for six or seven years, as has been done in the case of these hens, the result is practically a new pure-bred strain, providing pure-blood foundation stock was used at the start.

The Feed Consumed

An interesting thing about the breeding of this 300-egg hen is the fact that her dam and sire were related, the sire being a son of the dam. Each of these egg machines consumed in the year approximately the following kinds of feed in the quantities given:

- 15 pounds green food.
- 5 pounds ground corn.
- 5 pounds linseed meal.
- 5 pounds wheat middlings.
- 10 pounds wheat bran.
- 5 pounds beef scrap.
- 30 pounds wheat.
- 10 pounds oats.
- 5 pounds corn.
- 3 pounds grit.
- 3 pounds oyster shell.
- 2 pounds charcoal.
- 4 ounces salt.

The laying of the Oregon Station hens was remarkably regular throughout the



291 eggs in 365 days

year, as must be the case where three hundred eggs are produced in a year. Neither one of these record hens laid more than an



303 eggs in 365 days

egg a day. Their production by months follows:

Hen No. C-251	Hen No. C-543
Nov. 13-Dec. 1... 14	Oct. 16-Nov. 1... 13
December 23	November 5
January 23	December 15
February 23	January 25
March 25	February 23
April 26	March 31
May 30	April 29
June 27	May 31
July 25	June 27
August 28	July 26
September 25	August 24
October 25	September 28
Nov. 1-12 9	October 1-15 ... 14
Total 303	Total 291

The White Whirlpool

[CONTINUED FROM PAGE 4]

agents sample and test the cream and issue the company's checks for it. The actual expense of making cream into butter is very small, seldom over a cent and a half per pound, but the expense of maintaining the large field organization of agents and supervisors, together with station expenses, transportation, and inaccurate testing, brings the cost of making cream into butter to about eight cents a pound, or twice what it costs a local creamery to operate.

The centralizers have developed good outlets for their butter, but competition has been so strong that they have not been able to insist on good cream, and the quality of their butter is, on an average, only fair. This counteracts the value of their outlets, consequently the heavy cost of operating the system rests chiefly on the producers' shoulders. The prices paid for cream in the territory where centralizers operate are about twenty per cent. less than in States where the local creamery system flourishes.

Among the few good things to be said in favor of the centralizing system is that the centralizers pay cash for cream on delivery, and they offer a year-round market. But the system is wasteful and the centralizers maintain a dog-in-the-manger attitude that keeps local creameries from entering their territory. So the situation is critical and the only solution in sight is state protection that will enable local creameries to operate. The organization of cream-shipping clubs by which farmers may pool their cream and sell to the highest bidder is the best present means of obtaining better prices from centralizers.

Condenseries and Cheese Factories

The condensery is another important market. In 1910 there were in the country 136 condenseries, of which 127 were owned or dominated by about a dozen large corporations and the rest by individuals and firms. None were co-operative.

Another great milk market is the cheese industry, which is concentrated in New York and Wisconsin. These States together make more than three fourths of the national product. Their output is nearly equal, Wisconsin leading slightly. Michigan, Pennsylvania, California, Oregon, Illinois, and Minnesota are, in the order named, the other principal cheesemaking States. Nearly all the cheese is made in small factories.

Using Wisconsin as an example—because it makes forty-seven per cent. of the total—we note that while eight dairy call-boards are maintained as a market for Wisconsin cheese, over ninety per cent. of it is sold through private sales on the general basis of board prices. Stated differently, the price for less than ten per cent. of the cheese dominates the selling price for all.

In most Wisconsin cheese factories a patron acts as the salesman, though in some the cheesemaker acts in that capacity. Each system has its disadvantages.

The cheesemaker is a better judge of cheese than the producer, and also has a better knowledge of the market. But the patron is more interested in the price, and he is more likely to be particular as to weights because a cheesemaker who is usually obliged to stand a cut in price for poor quality tends to make up for it by putting in extra weight.

The best system is for the cheesemaker and a representative of the producers to both participate in the sale of cheese. In this way the producer gets the benefit of an expert's judgment, yet can act as a check on sales not in harmony with his interests. [TO BE CONTINUED]

Trees as Henhouses

By Mrs. R. A. Galliher

MANY persons who are fairly successful with poultry in summer are flat failures when it comes to producing eggs in winter. A good example of this is told in the following incident which came under the writer's notice recently. Several farmers with their families had met at the home of one of the members of "The Progressive Farmers' Club." The principal topic for discussion on that particular evening was "Making Hens Lay in Winter." One woman present, who was considered quite an authority on poultry, was flailing out the winter egg business as follows: "I don't believe one third of the big stories I read about hens laying in winter. Of course when the weather is mild, anyone who feeds properly will get eggs. But let the weather turn cold and see what will happen. Now we have as fine a lot of Brown Leghorn hens as you will find anywhere. Last winter we fed a corn-and-wheat ration, plenty of green food, and frequent warm mash. Plenty of clean, warm drinking water was supplied, and the birds had access to shell at all times. For three months last winter we didn't get enough eggs to pay for the shell consumed by those hens."

The woman ended her talk with the air of one who has convinced an audience. One man present asked permission for just one question. He asked, "What kind of henhouse do you have?" The woman hesitated, looked appealingly at her husband, who up to this time had let her do all the talking. Seeing that his wife was going to allow him to answer the question, he looked around at the questioner and drawled, "Well, I guess it's a Baldwin." That was enough.

For producing eggs there is much in the feed and also the breed, but the very best laying strains, fed on the right kind of food, if provided with no better house than a "Baldwin" or "Ramho," will lose the owner money.

PATIENCE, perseverance, kindness and pluck are the real names of qualities that may call luck.

It is better and cheaper to feed grain finely ground. The best gain can be secured by feeding birds finely ground feed confined in crates. This is the gist of the result of a poultry-feeding experiment recently at the Missouri Experiment Station.

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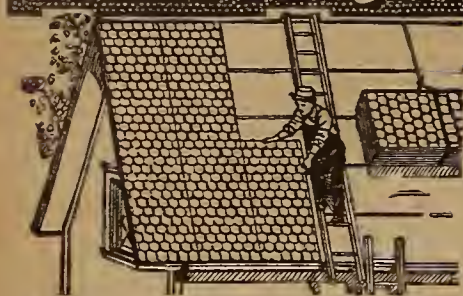
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Farm Notes

Grandma and the Children

By G. Henry



WHEN we're run down and grouchy let's call on Grandma. Let's look into the faded eyes, framed in a hundred crisscross wrinkles, to see the bright light that ever shines there for the children. Let's let a little sweetness filter into our hearts.

You've seen Grandma, her face aglow with supreme pride, as she reads the jubilant letter from forty-year-old son John, civil engineer, who has just witnessed the successful testing of his first important piece of railroad construction.

Only a few weeks before this Grandma's eyes filled with tears of joy when she saw Mary, John's pretty eighteen-year-old daughter, graduate from the seminary.

This is the happiness of old age, perhaps the highest happiness given to man or woman: the final reward of long years well spent. Only those who themselves have experienced it can hope to fully appreciate it.

Perhaps no living young person has yet succeeded in lifting himself or herself to Grandma's exalted state of mind when she takes her two days' old grandson from his cradle and, looking into his ugly little red face, sees there that he is the coming man who will make the family name famous—for has he not all the fine characteristics and none of the surface weaknesses which have blessed and cursed the strain for these past eight generations?

Grandma sees hope written large in the children—bless her, for hope inspires hope.

Varro, Farmer and Journalist

By David Buffum



Varro

"OUR illustrious ancestors preferred those who lived in the country to the inhabitants of cities, and not without reason. But families have now crept into towns, having taken leave of the scythe and the plow, and choose to be in the theater and circus rather than in the field or vineyard." This, which I quote from an agricultural writer, might well have appeared in almost any of our modern agricultural journals. For as long as I can remember there has been a lament in such journals because of so many leaving the farm for the city.

"Same Yesterday, To-day, and Forever"

But of one thing we may be very certain, that human nature never changes very much, and therefore, notwithstanding the changes that take place from time to time and from age to age, the human viewpoint, under circumstances which are in any wise similar, is very apt to be essentially the same. Agriculture, except as a pastime for the rich, does not seem at any period to have generally attracted those who were bred to a city life; while, on the other hand, those who have engaged in it in such a way as to know in its fullness all that it bestows and to realize the splendid field that it offers for brains and ambition have always deplored the migration from the farm of the intelligence and energy which so often seeks its field in the city.

So true is this that the quotation I have cited, though it might well have come from the pen of some present-day advocate of agriculture and country living, was written by an old Roman gentleman, Marcus Terentius Varro, in the days of Cicero. Let me quote one more line from Varro's treatise on agriculture and again see the similarity it bears in sentiment and language to the utterance of an English poet many centuries later. "Divina natura dedit agros, ars humana dedicavit urbes."

Cowper's line, "God made the country and man made the town," is an almost literal translation. Had Cowper read Varro? Doubtless the gentle and scholarly recluse had read most of the classics. But no one can suspect so true and sincere a poet of plagiarism. He was simply actuated by the same thoughts and feelings that had actuated Varro centuries before when, his civic and military life behind him, he found the greatest of all pleasures in the management of his farm and in literary pursuits.

Varro's farm was a large one and apparently required a large force of men to carry it on. His agricultural treatise ("De Res Rustica") was one of the last of many books that he wrote, and was begun, as he tells us, after he was eighty years of age, for the benefit of his wife, Fundania, that she might know how to run the farm after his death. The treatise is an elaborate one, and I think there is scarcely a point in farm management which Fundania, if she had been in doubt, could not have looked up in it. There is little doubt, however, from many things in the book that it was intended no less for the general reader than for Fundania. Many things are directly for the benefit of those, inexperienced in agriculture, who are thinking of taking it up as a calling. He emphasizes most clearly one great point which is too often overlooked by those who contemplate taking up farming—that agriculture, like every other business, must be learned before it can be profitably engaged in. "A thing most essential in agriculture," he says, "is whether the profit will be adequate to the expense and labor. If this is not attainable and anyone wishes to farm, he is insane and should be put under the custody of his relations, for no one of sound mind ought to wish to incur expenses in farming who does not hesitate to expend large sums, knowing that there can be no commensurate profit in return."



He is insane

The Humor of the Wealthy Amateur

This matter, which is more or less dwelt upon by all the old Greek and Roman writers on farming, is one that has more in it than may appear on the surface, and which shows how sound were their views at the core. For the wealthy amateur who raises corn at an expense of two dollars a bushel (which, with many such farmers, is not an exaggerated estimate) is accomplishing nothing in the cause of agriculture. If, as is often the case, he does not need the profit, well and good; but the object lesson which as a man of wealth he has so splendid an opportunity of presenting is wholly lost. Nor do I believe that such doubtful agricultural triumphs as raising an enormous crop at more than it will bring in the market is ever satisfying. The work is not done on a sound basis; the whole operation does not ring true, and farmers who must get their living from the soil, instead of being benefited by it, regard it with amusement and contempt.

Varro seldom loses an opportunity to express his contempt for this kind of farming and for the foolish fads of the wealthy amateur agriculturist. Thus, in his chapter upon fish culture, he sums up by expressing his doubt of it as a practical industry, stating that it is usually engaged in only by amateurs and adds, "When our friend Q. Hortensius had fish ponds built at great expense I have been frequently known him to send to Puteoli to buy fish for supper." And further describing Hortensius's fish farming he says that he not only had to buy fish for his table but often had to buy a large supply of small fish to feed to those he was raising. Hortensius, I need hardly add, was a wealthy gentleman who farmed solely for pleasure. Another wealthy amateur, Lucullus, who was a great bird fancier, comes in for a share of Varro's ridicule. Lucullus, who was a typical Sybarite, seems also to have been an original and inventive soul, and had a dining-room constructed in his aviary "where he might sup in style and see some birds dressed and served up while others were flying about the windows." It would appear that he did not find dining in a poultry house as satisfactory as he expected. "for the birds flying about the windows," observes Varro, "do not please the eye so much as the disagreeable smell of the place overpowers and offends the nose."



Others were flying about the windows

Agriculture Is Not a Science

A noticeable thing in the writings of all the classical treatises on farming is that they are distinctly practical, and that their authors, though sometimes comparatively wealthy men, farmed for profit, and essayed to instruct others only because they had learned how to make each operation under discussion a profitable one. We of the present time often hear agriculture referred to as a science. But it is not a science, however much science may play a part in it. It is a business; and if this homely but practical fact be not kept in mind by those who essay to teach others in farming their teachings, however brilliant they may be in some respects, must prove of little value.

SCHOOL TEACHERS

Also Have Things to Learn.

"For many years I had used coffee and refused to be convinced of its bad effect upon the human system," writes a veteran school teacher.

"Ten years ago I was obliged to give up my much-loved work in the public schools after years of continuous labor. I had developed a well defined case of chronic coffee poisoning.

"The troubles were constipation, flutterings of the heart, a thumping in the top of my head and various parts of my body, twitching of my limbs, shaking of my head and, at times after exertion, a general 'gone' feeling, with a toper's desire for very strong coffee. I was a nervous wreck for years.

"A short time ago friends came to visit us and they brought a package of Postum with them, and urged me to try it. I was prejudiced because some years back I had drunk a cup of weak, tasteless stuff called Postum which I did not like at all.

"This time, however, my friend made the Postum according to directions on the package, and it won me. Soon I found myself improving in a most decided fashion.

"The odor of boiling coffee no longer tempts me. I am so greatly benefited by Postum that if I continue to improve as I am now, I'll begin to think I have found the Fountain of Perpetual Youth. This is no faucy letter but stubborn facts which I am glad to make known."

Name given by Postum Co., Battle Creek, Mich. Write for a copy of "The Road to Wellville."

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One Way to Do It



This placing of the apple in the bottle one of my boys arranged. He put it in last spring while it was small, tying the bottle to the limb of the tree, where it remained until October, when nature caused the apple to drop. The apple is called a spice apple.
S. E. Rhine, Ohio.

A Substitute for Tile

What the Poor Man May Do if He Has Plenty of Timber

By W. D. Boynton

DOWN next to the tide flats on the water front of my place I have about two acres of very stiff clay, with a four to six inch layer of loamy mold over it in which formerly thrived a dense thicket of wild rose and thorn apple, interspersed with the usual fir and cedar so common to our Washington coast. This was grand good land, but it held water like a dishpan and was sorely in need of underdraining. It lay only two or three feet above the high winter tides.

Having more time and cedar than money, I was forced to adopt the poor man's substitute for tiling—the laying of split cedar underdrains. After getting rid of the fir and cedar stumps (and the world of weary labor that these few easy words indicate can only be known by those who have cleared land on this west coast) I spent nearly all of one winter in digging main drains and a network of laterals to tap the whole area. I could not go as deeply as I would have liked, on account of the high tides pressing into the mouths of the outlets; but this was only for a few hours each day, the lower tides enabling it to draw off nicely after the short hold-up of the higher tides. I managed to get the final top covering of the split cedar well below the plow depth. Since I could not go as deeply as desirable for the most effective drainage, I was obliged to put my laterals closer together than is commonly done—some of them only sixteen feet apart.

In clearing this and other lands I had always made a practice of splitting into quarters much of my nicest cedar, in twelve-foot lengths, hauling to one side for future use. Some of these quarters were sixteen to eighteen inches across their split faces, so that I was able to split some good broad rough planks from these faces for the top covering pieces in my ditches. After taking off two or three such planks from these faces, the remainder of the quarter would be too narrow for further use in that way, and was split into the size of ordinary rails, one of which would be laid in each of the bottom corners of the eighteen-inch wide trench as rough sides for my drainage box.

After laying my top plank on these side pieces, I packed fir and cedar boughs over the rough and far from tight box so as to exclude the dirt filling until it again took compact form. In digging the trenches I had laid to one side the rich top mold and piled the stiff clay on the other side. These thrown back in reverse order left but little of the raw clay to interfere with the future working of the land.

Dug as they were in the midst of the rainy season, I was enabled to get fair levels from the actual presence of the water in the bottoms of the trenches while the work of digging progressed.

Some cut short blocks of cedar, split off slabs, and lay them across the bottom side pieces as a cover to the box. This will do when there is no large good-splitting cedar at hand, but I prefer to have all wood run lengthwise of the ditch, as it is full of creases and unevenness, carrying well if laid lengthwise but obstructing more or less if laid crosswise.

A good cedar drain well laid will last near a lifetime. Almost any kind of timber

will last many years. For the short laterals two or three rough rails thrown into the bottom of a narrow trench, covered with boughs and earth, will do very well. Water will follow even a single rough stick laid in the ground. The main drains should be of the boxes to give greater carrying capacity.

In the Southern States cypress is an excellent timber for this use. Pine, fir, oak, and many other timbers are also good. Basswood, poplar, and other such soft woods will soon rot down.

Spying on the Sun

IT IS hard to realize that the sun is the source of all force on this planet. Without the sun we should have no coal, oil, water power, or plant or animal life—and we shouldn't be here ourselves. All our weather comes from the sun, and any great disturbance in the sun, which shows itself in a dark blotch called a sun spot, is felt on earth in a moment. Our telegraphs and telephones work badly, there are electrical storms and disturbances in our weather.

Sun spots cut off a part of our heat, and if we could know when they are coming we could anticipate late springs and early falls. So we are all interested in the fact that the scientists have formed a chain around the earth and are spying on the sun for twenty-four hours every day. When the observer in South Africa sees the sun set he quits work, knowing that for some time a man in South America has had his instruments at work; and when night falls in Peru, California takes up the work, to be followed by Hawaii and New Zealand in their order. Thus in a few years we shall have a complete record of the sun's behavior.

What's the use? Well, we may get a reliable system of weather predictions out of it. Professor Frost of the Yerkes Observatory at Williams' Bay, Wisconsin, refuses to be a prophet, but he says, "In twenty-five years we shall know more about it." There have been sun-spot weather prophets for years, but most scientists laughed at them until recently.

As One of Us Sees It

By Ed A. Lord

THERE is a large amount of money expended during the course of twenty years in making a farm out of a piece of raw prairie. Lots of labor and lots of patience are required. Good crop years, bad crop years, hot, dry years, many disappointments, much to encourage, a family to rear with all its attendant anxieties, sicknesses and expenses, winds and droughts, rains and snows, dust storms and hail, and accidents that befall one—all go into the makings of a lifetime.

We all grow older, and as we grow it is sometimes pleasant to look backward, and sometimes we almost shudder to think how close we were to going under and losing hope in our struggle for a living. We did not realize the risks we were gambling with, but with the blind faith and hope of youth used our energy to make and to do those things that we thought were for the best, endeavoring to do our duty to ourselves, family, and neighbors.

We grow older, our joints will stiffen, we get a bit slower in moving around, and finally go the way of all flesh.

Concrete Base for Feed Grinder

By Alonzo Price

THE dimensions of foundation: Length, 3½ feet; width, 3 feet 10 inches. The pit for the ground feed to drop in is 2½ feet by 1 foot 10 inches, and 6 inches deep. The depth of foundation is 1 foot except under the pit, where it is only ½ foot. The part on which the grinder rests is 1 foot deep, half above and half below the level of the ground.

The proportion of the concrete is one to seven. The cost of material for the foundation shown was \$1.25. Cement at that time was worth fifty cents per sack. The grinder is held to the foundation by three bolts which were imbedded in the concrete



as it was placed in the forms. They were held in place, until the concrete set, by a triangle made of three boards with holes bored at the proper distances.

This makes a very durable and convenient foundation. A box can be set to catch the feed, or the feed can be scooped from the pit.

THERE should be a law passed compelling some men to smile at home.



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The Market Place

No Credit on Lost Fertility

By W. S. A. Smith

HAVE you been interested in the question of rural credits so much talked about? Then you will enjoy reading what Mr. Smith says. Do you believe with him on this subject? If what he says is true, then soil fertility is the leading asset on any farm if it is present, and the main liability if it is absent. In other words, while the bank account is a good indication of a man's prosperity, it does not tell the complete story.

OUR worthy President speaks of trying to devise some system of rural credit. A necessary thing, and I hope to see it done. There are, however, two sides to this, which every thinking farmer ought to see. It's all very well quoting Old Country methods whereby farmers are given twenty to thirty years' credit, but you must remember that in these same "Old Countries" the rural credit organizations who lend the money know that at the end of the twenty or thirty years the farm they have loaned on is as rich or richer in fertility than when they made the loan. If our farms are handled in the next thirty years in the same way they have been in the past the security will be anything but good on a long-time loan. The new farmer who buys land at \$150 per acre can never hope to get the advance his predecessor did who bought for \$20. In fact, the chances look now as if he would have hard work to get any advance if he allows his fertility to decrease. He is up against the real thing, "root hog or die," and the sooner he realizes that his greatest asset is fertility the sooner he will make his high-priced farm pay. He must quit figuring on the \$2 per hundred-weight advance he hoped to get feeding steers, and feed for the three or four tons ensilage or the extra ton of alfalfa per acre he is sure to get from the manure.

Three years ago, on a newly bought quarter section, it took 55 acres to fill a 300-ton silo. Last year it took 35 acres, and this year, 1914, it will take 20 acres, in anything like an ordinary season. So that from the 55 acres which three years ago produced 300 tons ensilage I will this year get 300 tons ensilage and at least 120 tons alfalfa hay. This is the indirect profit from handling cattle.

I honestly think I am a good prospect for our new rural credit system when it comes. But what about my neighbors who have already delivered their corn crop to me and have no alfalfa? In my opinion their lands are as high now as a coat of paint on the buildings can make them. From now on it's not speculation in land; it's farming and fertility, or else a decrease in values. You had better get in or get out. You can't make these high-priced farms pay unless you have capital or credit to do business with, and you won't get suitable credit with decreasing fertility.

TEACH your horses to go into the collar gradually. When a load is to be started speak to the horses and take a firm hold of the reins so that they will arch their necks, keep their legs under them, and step on their toes. A loose rein means sprawling and slipping, often with one horse ahead of the other.

Ten Dollars Will Earn Fourteen

By L. K. Brown

THE hog market has shown remarkable stability. Runs that have been much in excess of those of a corresponding time one year ago have been absorbed by the packers at no declines and at times at advances. The January market reached the highest point on record for that month with the exception of 1910. When the size of the January 1910 and January 1914 receipts are considered the latter one must be considered to be the higher of the two. Such a market could not be maintained if there were a small demand and poor outlook for the summer consumption. But this is not the case. The demand from the fresh-meat channels has not lessened, foreign purchases have been liberal, and Eastern orders have been large. The outlook for disposing of the celled product is favorable—light runs are expected for the late spring and summer, not enough to handle the demand, and a small crop of 1914 pigs is looked for by many because of the devastation of breeding stock by cholera.

The advances of hog prices and the declines in corn have stimulated feeding operations. This should be a profitable venture, as some are predicting a \$9 market by April. At the current prices locally a \$10 investment in corn will return \$14.50 in pork. Or if the feeder has raised his own corn he can obtain 20 cents per bushel

above elevator price for his corn for having marketed it in the form of pork.

The produce market has acted sympathetically with the live-hog market. While many bearish statements have been circulated, the prices of pork products have advanced and the market has been active, thus discrediting these statements. An equally good market is ahead for some months to come. Temporary declines are to be expected, but a spring similar to that of 1910 is in sight with hardly as extreme high prices.

Break in Prices Expected

By J. P. Ross

THE hope of sharing in the prevailing high prices of the middle of last month brought a swarm of half-fed sheep and lambs to the leading markets, without, however, affecting prices to any great extent. It is claimed by some authorities that the high price of feedstuffs is at the bottom of this sacrifice, but one is disposed to think that in such an open winter as this has so far been an easy way could have been found to avoid this wholesale slaughter of valuable material. Many sheepmen appear to have yet to learn that one of the great virtues of the ovine race is that it can be maintained in good condition on almost any farm at a minimum of expense until the right time for the finishing process presents itself. Most of this unfitted stuff came from the Corn-Belt States, and it is not likely that much more of it need be expected from that quarter; but there are vast numbers of sheep and lambs being fed in the West which will probably come to Chicago and Kansas City during this month and in March, and it is possible that some break in prices may occur. Much of the sheep product of these States, however, is finding its way to the big cities of the Pacific Coast, and as more advantage of this outlet comes to be taken, the chances of any considerable break of prices in the East are greatly lessened.

Renewed vitality is reported in the wool market, especially for the finer grades. Large sales of graded wools from the West have been effected at from 18 to 20 cents. Foreign wools are much in demand. A federal law applying to clothing the principles on which the Pure-Food Law is founded would have a very tonic effect on the wool trade.



Fair Hostess—"Do cheer up, Mr. Grump, and I'll give you more coffee."
Mr. Grump—"Thanks! Please do! It may keep me awake."

Where Stitches Did Harm

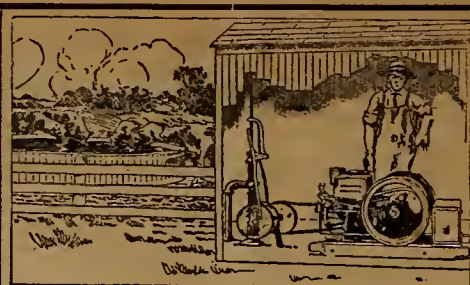
By Dr. A. S. Alexander

A MARYLAND dairyman writes me about his Jersey cow that has one of her teats torn through the milk duct. He attempted to sew the torn edges together without success, and now the milk flow in that quarter has ceased.

It is a mistake to put sutures (stitches) in a teat that is torn down to the milk duct. The stitches tear out or cause infection, and do more harm than good. The right way to treat such a wound, at the first, is to cleanse it with a one one-thousandth solution of corrosive sublimate (bichloride of mercury) or two per cent. solution of lysol or carbolic acid, and at the same time cut away all ragged or partially loose tissues. This done, dust the wound with iodoform and at once bandage from end of teat to udder with a strip of surgeons' plaster or tape. For a few days withdraw milk by means of a sterilized milking tube; then milking can usually be done with the bandage in place. The bandage may be removed in a week to ten days and the wound should be found healed. The bandage has to come off at once if the teat swells, becomes red, and so shows signs of infection.

In the case described infection no doubt came from treatment given, and milk became suppressed from garget (mammitis) and not from an obstruction.

Under the present conditions the best that can be done is to proceed as follows: With a clean milking tube that has been boiled for twenty minutes try to draw off the milk possibly present in affected quarter. If no milk flows when the tube goes in far enough to get it if present, and you find that pus is present, or curdled, bloody, smelling milk or whey, the quarter is permanently ruined and the cow should be sold to the butcher or fattened for slaughter. It does not pay to retain a cow when her udder has become diseased. If she is to be fattened for killing, have the end of the teat cut off, so that pus will run off freely.



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Live Stock and Dairy

Short Records are Forced Records

By W. H. Jenkins

OWNERS of pure-bred cows make tests to establish records on which to sell either the cows or their offspring. Most of the cattle bought on these records are bought to grade up scrub herds or for breeding pure-bred cows to replace scrubs. The value of a cow depends upon her capacity for milk and butterfat production and vigor of constitution. The man who is

Jersey cows were all under the one-year test. Each milking of these cows was weighed and recorded by the milkers. After milking, the milk sheet with these records was taken to the office and transcribed to an account book, thus making a permanent record for future reference in selling the cow or her offspring. I have been asked, "Does it pay to keep daily records for one year with any but pure-bred cows?" My answer is that it pays to weigh and test the milk of all cows until their values have been determined. At Meridale Farms the keeping of daily records of milk is not considered expensive. Each cow wears a plate with her name on it. Her name is also on her stall and on the tabulated milk sheets hung up in the stable. It is a very simple operation to weigh the milk at each milking and write the weight on the sheet. The four cows shown in the photograph



Four Jersey cows whose milk and butterfat records have been kept for three consecutive years. Last year these four cows produced the equivalent of three thousand pounds of butter

making his living by selling market milk or butter is concerned most about these two inbred characteristics of a cow, but if with these he can have fancy points the animal will be more pleasing.

The questions I wish to raise are these: "Is the Short test, by which I mean the seven-day, thirty-day, and sixty-day test, a dependable basis on which to buy a cow?" "Has it any real value to the farmer who is buying foundation blood for a future herd of high producing power he wishes to build up?"

Here is one instance of the method used with one Holstein cow in obtaining what a few years ago was the world's highest thirty-day record for milk and butter. A cow was selected which was known to have a great capacity for milk production and was fed a forcing ration. This consisted of all the green alfalfa, grain, and heets the cow could eat and still maintain a healthy appetite, and in addition all the new milk the cow would drink. The cow was milked four times a day and gave more than one hundred pounds of milk in twenty-four hours. The cow was nearly fresh, and her udder was so large it nearly touched the floor. It must have caused her pain to carry it, and still more to lie down. The whole process, especially for a cow fresh in milk, was unnatural and dangerous. Any forced test cannot show the normal capacity of the cow or what can be expected of her with the food, shelter, and care given the average dairy cow.

Let a Cow Show Her Worth

Now I want to show how the one-year test is beneficial to all parties concerned, and is necessary for the owner and buyer to determine the real value of a cow. No one knows the normal capacity of a cow for production until she has been fully fed every day in the year a fairly well-balanced, succulent, and palatable ration, kept the most comfortable in winter in a warm sanitary barn and in summer stabled during cold nights, and all the time protected from insect pests. In addition to that, when the cow is always treated kindly, kept quiet, and even petted, she will have an opportunity to show what she is capable of. And that is a fair test on which to establish the true value of a cow. No dairyman knows the value of a cow to keep in his own dairy for milk production until he has given the cow the chance to "make good," and a buyer cannot know what she is worth to him until he has seen her authentic yearly record.

A daily record also indicates better than anything else a cow's physical condition, for when there is a sudden drop in the milk flow you can look at once for the cause, which is generally sickness.

It is an aid to economical feeding, and is worth all the trouble for this purpose. It shows also how much grain can be profitably fed. The one-year test repeated year after year with a cow that is showing good performance, results in an increased value of the cow over that shown by only a one-year record.

I recently visited Meridale Farms in New York State. Three hundred pure-bred

produced last year the equivalent of three thousand pounds of butter. It was the third consecutive yearly record kept since the cows were heifers.

The dairy farmer who is considering the question of keeping records of his cows, may say, "I have not the time." Let us see. At one minute for each cow, for a herd of twenty cows it will require twenty minutes. With three milkers it will take seven minutes longer to complete the milking, and as the farmer and family probably do the most of the milking the cash cost in labor is very small. Many who have undertaken the keeping of records have become so interested that they ceased to consider the work as a burden, and it resulted in discarding the hoarder cow, procuring pure-bred animals for a foundation stock and breeding up a profitable herd.

Good Words for the Goat

By Irma B. Matthews

I HAD never seen the goat kept for milk production until I came to Pasadena, California, but I found that many families here supply themselves with milk by keeping one or more of these little animals, and we were induced to try it for ourselves. In doing this we have learned a few things that may be of interest to others.

First, goat's milk is sweeter than cow's milk and therefore more palatable. It contains a greater amount of butterfat, and yet is more easily digested. The fat does not separate as quickly as it does in cow's milk, taking nearly twice the time for cream to rise.

Physicians recommend it for invalids and for infants, many babies being successfully raised on it after everything else has been tried and proved a failure. For a tubercular patient it is far superior. People have just begun to find out the part played by cow's milk in the spread of the tubercular germ.



The mother of large families

and the milk of the goat seems to be immune from this terrible disease.

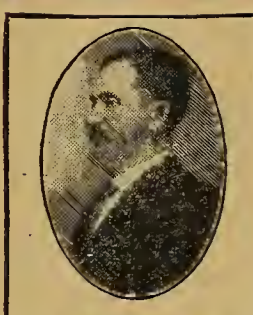
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- Lunging on the bit.
- Lunging and plunging.
- Refusing to stand.
- Refusing to back.
- Shying.
- Balking.
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- Afraid of robes.
- Afraid of clothes on line.
- Afraid of cars.
- Afraid of sound of a gun.
- Afraid of band playing.
- Afraid of steam engine.
- Afraid of the touch of shafts or harness.
- Running away.
- Kicking.
- Biting.
- Striking.
- Hard to shoe.
- Bad to groom.
- Breaking straps.
- Refusing to hold back while going down hill.
- Scaring at hogs or dogs along the road.
- Tail switchers.
- Lolling the tongue.
- Jumping fences.
- Bad to hitch to buggy or wagon.

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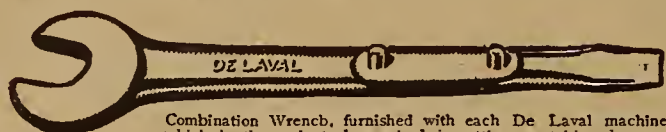
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goat dairy, at twenty-five cents. The woman who owns the goat dairy is at present supplying the milk for twenty-five babies.

It costs by actual test about five cents a day to keep a goat. Ours are fed on alfalfa, with half a pint of rolled barley and a pint of bran night and morning at milking time.

A good goat gives from two to three quarts of milk a day, although the white Spanish goat shown in picture gave nearly three quarts when fresh. A goat often has two kids, sometimes three, and rarely four. The one in the picture is shown with her three kids when they were twelve hours old. She was addicted to large families, for the previous year she gave birth to four kids.

Prices on goats range from fifteen dollars up, according to breed and the amount of milk they give.

They have certainly proved a success here, and it seems that they might in other places as well, especially where there are either invalids or children to create a demand for their milk at good prices.

WHERE silage is fed there is a great amount of liquid manure. A covered concrete pit for this, with pipes leading from the concrete stable-floor to carry the liquid, will pay well on the investment. It can be pumped into a hauling-tank from this pit, and is splendid for grass or growing grain. Or it may be pumped into drier manure and hauled out in that. Some of it may be advantageously used to moisten the compost heap of leaves, litter and turf, for the hotbeds, cold-frames, flower-beds or garden.

The Length of Churning

By H. F. Judkins

THE old saying, "The world was never made in a minute," applies also to good butter. Under no conditions can butter of a good texture and buttermilk low in butterfat be obtained in five or ten minutes. To obtain the best results one should churn thirty to forty-five minutes.

When to Stop Churning

The time to stop churning is not after the butter has been collected into a mass, but when the butter grains are about the size of peas. The churn should be stopped once or twice after the butter breaks and an examination made so as to avoid over-churning. At this stage the buttermilk can be drawn off and the butter washed and salted to the best possible advantage.

Some of the things that affect the length of churning are the degree of ripeness, the temperature of the cream, the per cent. of fat in it, and the fullness and speed of the churn.

Ripe, or what is commonly known as sour, cream churns more quickly than sweet cream. The lactic acid which is developed changes the body of the cream by weakening the membranes enveloping the fat globules so that they can come together more readily.

The churning temperature is probably the biggest factor affecting the length of churning, and yet how often it is entirely ignored! A dairy thermometer, although the cost be only fifty cents, is just as essential to the butter-maker as is the clinical thermometer to the veterinarian. After you get one do not fail to use it. It is impossible to state the best churning temperature for different conditions, but in general butter will come in the proper length of time if the temperature is between 55 and 65° F. The higher temperatures must be used in winter and the lower ones in summer. If the temperature is too high the butter will come too quickly and have a soft, greasy texture, and if too low it will take too long to churn.

Rich cream will churn more quickly than thin cream, because in rich cream there are a greater number of fat globules, and they are nearer together, so that they come in contact with each other more quickly.

The churn should be turned so the cream can be heard to fall with each revolution. If the churn is turned too fast the cream is held stationary in one end of it, while if it is turned too slow the cream simply flows from one end to the other.

Reasons for Difficult Churning

Very often I have been called upon to answer the following question: "What shall I do? I churn and churn but can get no butter." It is rather difficult to answer without knowing all of the exact conditions, but as a rule churning a little ripier cream, churning at a higher temperature, and, if possible, feeding succulent feeds will overcome the trouble. This complaint usually comes from a person keeping from one to five cows, and in the fall or winter, near the end of the cow's lactation period. Why? If you do not have silage, usually very dry feeds are fed during fall and winter months. This tends to harden the fat globules in the milk. As the cow approaches the end of her lactation period the fat globules also become hard and smaller, hence it is more difficult to get them to unite and form butter. If you have a large herd of cows they are not likely to all go dry at once, and by mixing the milk of the whole herd difficult churning can be avoided.

Pork from High-Priced Feed

By Mrs. J. W. Mathie

ON THE first of September, 1911, our sows presented us with twenty fine-looking pigs. Pigs were plentiful that fall, and there was no sale for them at weaning time except at a very low price; \$1.50 and \$2 was the most that was being paid. As ours were large and thrifty, it seemed like giving them away to sell at that price, so we decided to grow them ourselves.

Our neighbors thought we were foolish to think of wintering so many when grain cost so much, corn being \$1.45 a hundred. As it turned out later, we paid \$1.80 for a good many hundred pounds before those pigs went to market.

During the first three months we sold six of them, and one was accidentally killed, leaving us thirteen. One we did not fatten, keeping her for a brood sow, but she was fed with the others until the last two months of the time. This left twelve for market. A longer time was required to grow them than would have been the case in warmer weather, but as we had in mind the value of the fertilizer which we needed badly, we did not care so much about this.

Hardwood Sawdust for Bedding

We kept them supplied with plenty of absorbents so that none of the fertility would be wasted. All wasted matter that would soak up wet was dumped in the pigpen, and probably twenty loads of fine hardwood sawdust was used as bedding. As hardwood sawdust has a distinct value of its own when used in this way, we did not charge this up to the pigs, which we should have done if it had been softwood sawdust, which has little or no value except as an absorbent.

For a time they had what skim milk we could spare from eight cows after feeding four calves. Later we fed creamery buttermilk, which could be purchased for ten cents a hundred pounds.

The purchase of mill feed began November 1st. During November, December, and January they were fed mixed feed and skim milk or buttermilk made into a warm swill. If no milk was to be had water was used.

They had a few ears of corn thrown to them, and had ashes, some charcoal and salt, and a handful of fine ground bone meal. All told they had about fifty pounds of bone meal, which cost three cents a pound.

February first their ration was made half corn meal, and after March first the amount of buttermilk fed was increased, as there was an increased supply of this feed. Through June, July, and August they were fed corn meal and buttermilk, all they would take.

Profit Good, but the Output Small

They were marketed in August, several of them to the local butcher, the remainder at the stock yards. They were not as heavy as other hogs we have raised, but they were fat and were pronounced prime meat.

The margin of profit made a very satisfactory wage for the time spent in caring for them, and a large per cent. on the investment, which leads me to the conclusion that there is as large a per cent. profit on most farm products as on most manufactured products, but the output is so limited that the total year's income shows up small.

The account shows up as follows:

RECEIPTS	
Sold 1,889 pounds live weight, at 7c.....	\$132.23
Sold 1,445 pounds to butchers, at 8c.....	115.16
Sold six young pigs for.....	18.50
Sold one brood sow.....	15.00
Total	\$280.89
EXPENSES	
Mixed feed, 3,000 pounds... ..	\$50.40
Corn meal and corn, 5,000 pounds	82.95
Buttermilk	5.00
Bone meal and incidentals.. ..	3.00
Total	141.45
Balance	\$139.44

In addition to this balance there were 55 loads of manure which, at \$1 a load, the usual estimate, would be \$55, making the total balance \$194.44. Take from it the value of the pigs at weaning time, \$40, and we have a remainder of \$154.44 on an investment of \$181.45 and the time used in caring for them.

MATCH up the colts early in life, so that each one's mane can be trained to lie on the side next its mate, thus leaving the graceful arch of the neck exposed to view.

SHOULD the fire-eaters of Mexico ever really put their energies to raising stock instead of Hades, we can confidently expect to become familiar again with the flavor of prime beef. A so-called authority asserts that Mexican land growing para, privilege and zacatan grasses, all particularly rich in starch and sugar, will amply pasture one head of stock per acre, whereas in the Pauhhandle country of Texas it is necessary to allow twenty acres of pasture for each head of stock grazed.

Garden and Orchard

Orchard Hygiene

By A. J. Rogers, Jr.



MANY growers find it hard to realize that their fruit trees are subject to diseases as numerous and difficult to control as human diseases. One advantage, however, that the tree doctor has over the human doctor is that he can sacrifice with impunity the individual for the benefit of the masses.

Methods to control or eradicate these fruit-tree diseases and pests have been developed so rapidly in recent years that many growers are confused by the apparent complexity of these operations, and they hold up their hands and pray for good luck before really giving the subject much thought.

Good luck, however, comes to the fruit-grower only when he proposes to prepare the way by executing prescribed hygienic measures.

Orchard Pests Classified

There are five main groups under which the diseases and pests of fruit trees come. These groups are as follows:

1. Insects which obtain their food by actually chewing the leaves, fruit, or wood. We have an example in the codling moth, which is chiefly responsible for wormy apples.

2. Insects which obtain their food by sucking the juice from the leaves, fruit, or wood. Examples of these are the San José scale and the common plant louse or green aphid.

3. Fungous diseases or parasitic plants which live in or on the leaves, fruit, or wood. The apple scab is a good example of a fungous disease.

4. Bacterial diseases which get their food in much the same way as the fungi do. Apple or fire blight is very prevalent in apple and pear orchards.

5. Diseases or troubles caused either by a "living fluid," lowest down in the scale of life, as for example the so-called "peach yellows" of the peach, or by wrong conditions of growth. Sun scald, for example, is the splitting open of the bark on the trunk of the tree caused by alternate freezing and thawing.

Methods of Control

In general, tree troubles are to a large degree overcome by proper cultivation, fertilization, pruning, and disinfecting, with a last resort to pulling out and burning individual trees.

Spraying will control nearly all the serious diseases and pests coming under the first three groups. Spraying for biting insects and fungous diseases is usually done in anticipation of the trouble. Spraying for sucking insects is done as soon after their presence is known as possible.

To have success in this operation one must determine the pest or disease and then at the right time spray thoroughly with the proper material. Biting insects must be killed by poisoning their food. The best poison to use on fruit trees is arsenate of lead. Sucking insects must be dealt with by a substance which kills by penetrating their bodies. Lime-sulphur solution, tobacco products, and kerosene emulsion are used for this purpose and are called "contact insecticides." Fungous diseases are controlled by spraying with a fungicide, which will actually prevent the so-called spores (eggs or germs) from germinating. The three leading fungicides are Bordeaux mixture, lime-sulphur solution, and self-boiled lime and sulphur.

Each kind of fruit tree has its set of troubles. Each must be met in a different way. The table at the top of the page outlines a schedule of spraying which may be safely followed.

"Six days shalt thou labor" doesn't even suggest sitting on the store box whittling at a stick.

"Forward" Strawberries

By S. Gray

THREE years ago I planted a small bed (16x24 feet) of strawberries in April. I planted the rows two feet apart, and the plants fifteen inches apart in the rows. I pinched off all the buds so that there would be no berries the first year; then I let them run, and trained them into a matted row. The next year I picked sixty-six quarts. I kept them in the matted row, and the second year I picked seventy-three quarts. The third year I let them run all together and picked one hundred and eighteen quarts—nearly four bushels. As I figure it this is at the rate of 450 bushels to the acre. The soil is a sandy loam, and not a weed was allowed to grow. I spaded under a heavy layer of manure before planting. The berry which I used was the "Forward."

E.W.

A General Schedule for Spraying

TIME TO SPRAY	DISEASES OR PESTS	SPRAY MATERIAL USED
Apples and Pears		
1. Spring, before buds swell.	Scale insects and aphid eggs.	Lime-sulphur (1 to 8).
2. When blossom-buds show pink.	Scab and other fungi, apple-worms and codling-moth.	Bordeaux mixture and arsenate of lead.
3. When petals fall.	Codling-moth and scab.	Lime-sulphur (1 to 40) and arsenate of lead.
4. Two weeks later.	Codling-moth and scab.	Bordeaux and arsenate of lead.
5. Late in July.	Codling-moth if numerous.	Arsenate of lead.
Peaches		
1. Spring, before buds swell.	San José scale and leaf-curl.	Lime-sulphur (1 to 8).
2. After petals fall.	Curculio.	Arsenate of lead.
3. Two weeks later.	Brown rot, scab and curculio.	Self-boiled lime and sulphur and arsenate of lead.
4. One month later, before fruit ripens.	Brown rot and scab.	Self-boiled lime and sulphur.
Cherries and Plums		
1. Spring, before buds swell.	Same as for apples.	Same as for apples.
2. Just before blossom-buds open.	Leaf-spot, black rot, fruit-rot, curculio.	Lime-sulphur (1 to 40), Bordeaux or arsenate of lead.
3. After petals fall.	Leaf-spot, black rot, fruit-rot, curculio.	Lime-sulphur (1 to 40), Bordeaux or arsenate of lead.
4. Two weeks later. Repeat if weather is wet at intervals of two weeks.	Leaf-spot, black rot, fruit-rot, curculio.	Lime-sulphur (1 to 40), Bordeaux or arsenate of lead.

A TRAP recently invented in Maine for catching night-flying insects—particularly the brown-tail and gipsy moth—does the trick successfully. The trap is baited with a bright light. With forty-five of these traps, one hundred quarts of brown-tail

moths were caught in one night; another night, forty-five quarts were caught. The heaviest catch was one hundred and eighty-five quarts from twenty-five traps in one night, which, at a reasonable figure, was estimated to be 1,000,000 moths.

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"Many kinds of food were tried, all with the same discouraging effects. I steadily lost health and strength until I was but a wreck of my former self.

"Having heard of Grape-Nuts and its great merits, I purchased a package, but with little hope that it would help me—I was so discouraged.

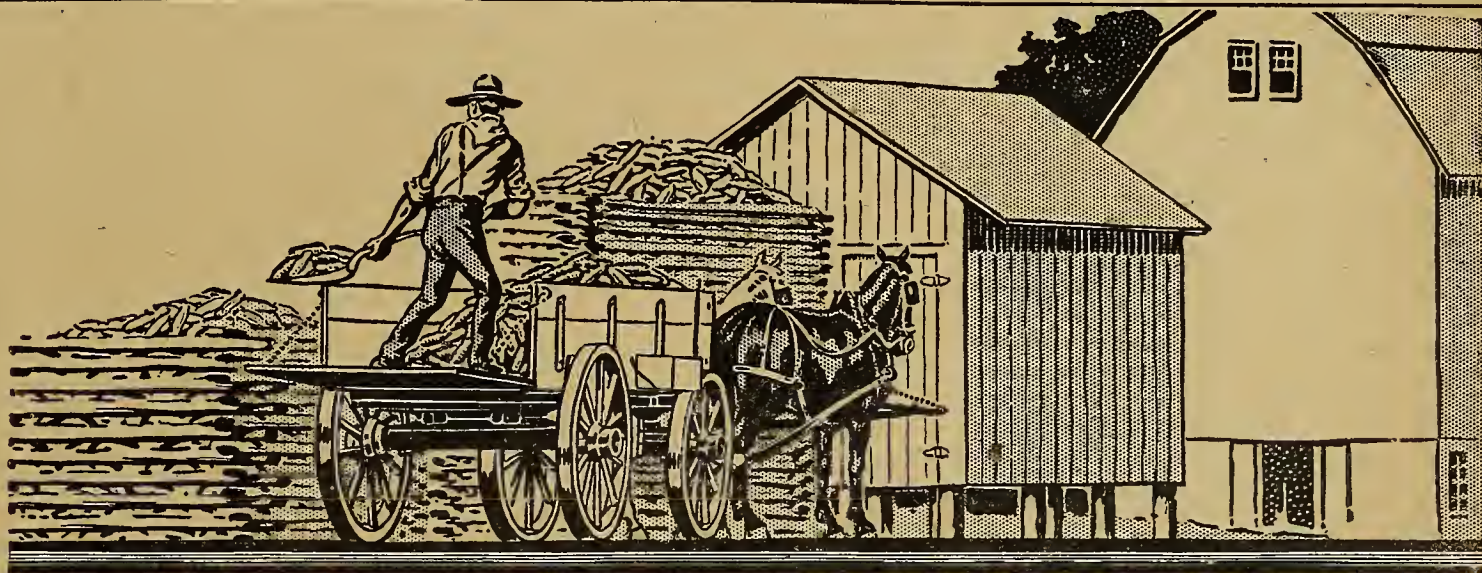
"I found it not only appetizing but that I could eat it as I liked and that it satisfied the craving for food without causing distress, and if I may use the expression, 'it filled the bill.'

"For months Grape-Nuts was my principal article of diet. I felt from the very first that I had found the right way to health and happiness, and my anticipations were fully realized.

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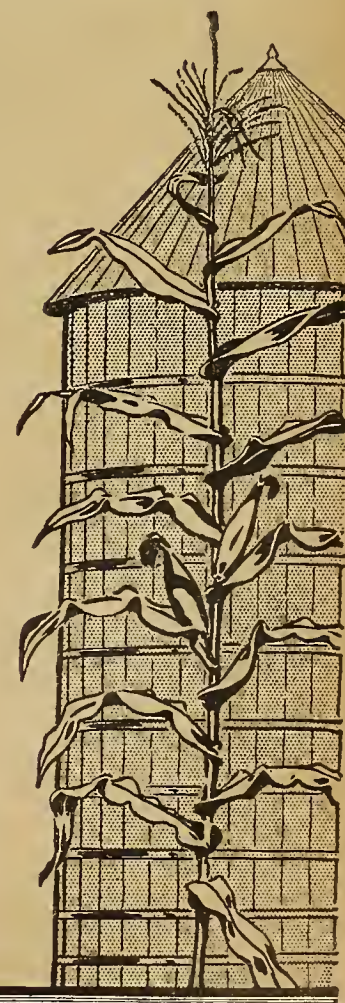
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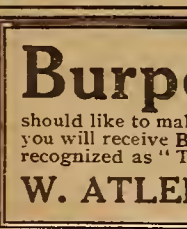
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Crops and Soils

Why Not Stop Erosion?

By Clyde A. Mann

QUITE contrary to the rather complacent views of many Northern farmers I found on a recent trip to the South that there are many ways in which the Northern man could benefit by observing how the Southern man does his farming. They may have been slower to awaken to many improvements in the methods of agriculture generally followed to-day, and they may be hopelessly blind to the opportunities and needs for growing hogs and live stock down in Dixie, but in some respects they still are a lap or two ahead.

One important thing I noted, mine being a hill farm, was the care with which the fields are plowed and tilled to prevent washing. There are many side hills in Illinois and adjacent States which have been ruined needlessly for failing to observe the rules which have preserved steeper hills from wash in spite of heavier rains and greater liability to soil wash. In the South a ten-acre field may be cut up into half a dozen patches, each plowed a different way and probably terraced against wash.

In the hill district of Alabama, where there are some evidences of shiftlessness and of meager facilities and knowledge of farming, there is a painstaking regard for cross-hill plowing that ought to make a good many Northerners sit up and do some thinking. I am one of them. Failure to plow as they do, and to terrace, has cost me some bad washouts on a hillside orchard.

The farmers of this locality (Van Buren County, Michigan) regard the possibility of washing as among the things inevitable. But observe the way some cotton-fields of the hill country in the South have been tilled generation after generation and still are without washes.

A hillside farmer cannot go around or up and down a square slope. No such thing as plowing round and round a field as one can do on the flat prairie!

The fields are not of regular shape in the Southern hills. Each side slope is plowed one way, and that way across the slope. On the way down there will be terraces at regular intervals where the ground was thrown into a furrow higher than the others, and that furrow perhaps built up by use of pick and shovel. When completed, the furrow is allowed to grow up to grass and consequently accumulate more or less "addition" soil year after year. One patch may be plowed at right angles to another, a third at an obtuse or acute angle to it, but never is the plow allowed to open a trench through which some down-pour may make a bee line for the valley, carrying a few tons of the very best humus off the field.

All of this means a deal of "fussing" as compared with the straightaway plowing in Illinois or Iowa. It means small farms


tilled intensively or large ones tilled with incessant watchfulness. But on my Michigan hillside I have been able to apply the general principles of cross-hill plowing without going to the extreme of building terraces and laying the field out like the pieces in a crazy quilt. Through a young orchard we could plow four ways, and instead of following some tradition that the furrows should run either north and south or east and west we have plowed with regard to the contour of the land. We have stopped washing this way, and put other places already washed in a fair way to recovery. I am much obliged to Dixie for the useful idea.

Stop the Slug Nuisance

By S. Cochrane Macky

TAKE two ounces of Paris green, dissolve in one gallon of water, mix solution thoroughly with five pounds of bran. Spread bran out to dry. When dry lay it in rings about six inches in diameter. The slugs seem to smell the dry bran and they will leave lettuce or any dainty flowering plant for the bran. Next morning they will be found dead all around the bran. This plan has drawbacks, for if fowls or birds eat the dead slugs they might die also.

Another plan: Take pure bran, lay it as above on a warm moist spring evening, marking each place you have laid with white paper. Go out about ten o'clock at night, or later, with lantern and a flour dredger half filled with freshly slaked lime and dust where the bran has been laid. Next morning you will find dead slugs which nothing will eat on account of their being covered with lime.



Jim Jenkins is cuttin' his big walnut grove. Jim allows he can spend the money right handy on his racing mare and some mining stock, thus making sure of leavin' a fortune to his two little girls.

Persistent Alfalfa

By W. F. Wilcox

IT IS amusing to farmers of the arid region, where alfalfa is so persistent in its growth, to read of the trials of Eastern farmers in getting a stand of this wonderful plant. Why, with us it is a regular weed! I had to abandon a garden spot after two years of gardening just because I couldn't keep the alfalfa out. And where it came from is a mystery, unless in the manure applied and in the irrigating water.

The way alfalfa transforms the soil is a miracle. Some of our new Western land will not well produce grain until it has been seeded to alfalfa.

One of my fields was being squared up. It had a corner and one side plowed up where there had been alfalfa. The rest had never produced any. Wheat was sown, and the harvest showed me personally the effect of alfalfa. The grain was a half better at least on the alfalfa ground. The wheat stood better, the stalks were taller and ranker, the heads a great deal longer.

How one hates to plow alfalfa up! In the first place it is disturbing a very satisfactory and money-making crop. And then what a task it is, what horsepower is needed, and how persistent the alfalfa is in remaining alive! It requires two years to get rid of any appreciable amount of it. It is useless to attempt potatoes right after alfalfa, for one never could keep the alfalfa chopped out. Grain should follow it, and then spnds. All in all, for us alfalfa is about the surest crop there is.

A Concrete Silo for Alfalfa


By John Y. Beaty

THE first concrete silo in California was built by Hinton Brothers of Solano County. They have a certified dairy farm with about one hundred and fifty cows, and although there was a large acreage of alfalfa on the farm there were about three months of the year when green feed was not available. Irrigation was practiced, but even with plenty of water green alfalfa could not be supplied during the entire year. Some green food must be supplied. They turned to the silo for it and the silo responded.

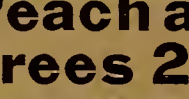
The silo was built seven years ago, and the experience of others in building concrete silos was not available, so the plans were made along original lines. The inside forms were made by cutting round edges on



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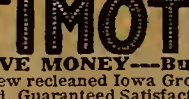
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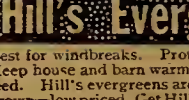
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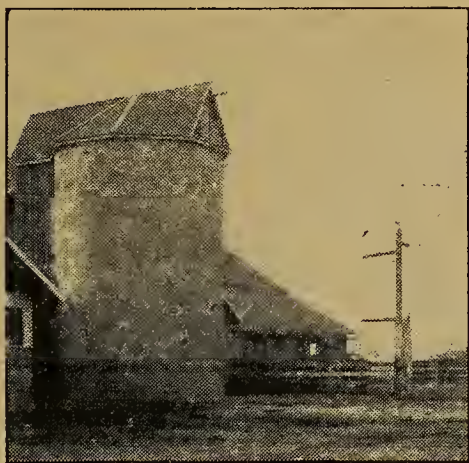
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planks and boarding up between a pair of these. When the entire circle was made it was possible to lift the form as a section of the silo was completed.

For the outside a different method was used. Heavy wires were stretched upon the ground, and to these were nailed a series of slats. This made a long flexible strip which was stretched around the inside forms, forming an almost tight fence. This was held away from the inside form at the proper distance by boards, and thus it was that the outside form was built.

Although this may seem a cumbersome method, the outside form was easier to store after the silo was built than the inside form. It proved to be much less bulky.

The silo was built twelve feet in diameter and thirty feet high. It holds about seventy tons of alfalfa silage. The total cost was \$500. This cost is much greater than it should have been, however, for the walls were made twelve inches thick. Of course



This concrete silo keeps the alfalfa nutritious and palatable

there was no need of making them so heavy. Mr. Hutton had no experience in handling concrete, and so did not realize that a much thinner wall would have served the purpose.

Corn does fairly well in Solano County but alfalfa does much better. So the alfalfa was put into the silo instead of corn. The method of filling is exactly the same.

The alfalfa is cut at the same stage in its growth as when it is cut for hay, but it is not allowed to lie in the field until it has begun to cure. It is hauled to the silo as rapidly as it is cut and run through the silage cutter at once.

A twelve-inch silage cutter, run by electricity, is used, and this handles the alfalfa cut by two mowers. A single horse rake keeps the alfalfa bunched up behind the mowers, and four wagons do the hauling from the field, which is only about a quarter of a mile from the silo. The filling costs about two dollars per ton.

It requires from ten to twelve acres to fill the silo, and the operation is usually completed the last of October or the first of November. One year it was filled as late as December 25th. It requires about three days to fill it.

During the season when green alfalfa is available it is fed to the cows in the barn mornings, and in racks in the yard in the evenings. When the silo is used the silage is fed in the barn both morning and evening.

There has been no trouble at all in keeping the silage. There is no more loss than is usual with corn. Mr. Hutton has observed no difference in the milk flow when the feed is changed from green alfalfa to silage. The cows seem to have just as good an appetite for one as for the other.

Another New Crop

One That Will Develop Under Dry-Farming Conditions

By L. L. Klinefelter

TWO men lived on adjoining lots in town. One of them kept chickens, the other did not. Naturally the latter regarded his neighbor's fowls as a nuisance and was tempted to heave rocks at them, but observing that many of them were hens he changed his mind and, instead of throwing stones at them, he fixed up attractive places for them to lay. In this way he converted a nuisance into a source of revenue.

A Liability Made an Asset

If the day ever comes when farming shall be placed on a truly rational basis we will all follow the plan of the man who fixed up nests for his neighbor's hens when they trespassed on his grounds.

But instead of being pestered just by our neighbor's hens we are pestered in the country with many things, mainly in the shape of noxious weeds. Now a weed is merely a plant for which man has not yet found a use. The potato plant was once considered a weed. So was the tomato, and probably many of our cultivated plants. By finding a use for them man has made an asset of what had been a liability.

When growing naturally, all plants, including weeds, will grow only where the conditions are suited for their growth.

When a plant is found willing and anxious to grow where most plants do not

want to grow, the wise plan is for the individual, or at least for the Government, to find a use for it.

That is the rational method, but most of us go contrary to the plain indication of nature, and endeavor to force plants to grow that don't want to grow at that place.

Here in eastern New Mexico, where I live, a certain native plant is now crossing the dividing fence between weedhood and crophood. This plant is found growing wild all over the prairies, especially where the soil is covered with a few inches of sand. Up to three years ago it was not supposed to have any commercial value whatever. Since then over five hundred carloads of it, in bales, have been shipped out of my vicinity, and a carload brings an average price of one hundred dollars, net, cash.

This plant is known by various names in different localities, the most common in this locality being "soapweed." Forty miles away they call it "bear grass," but perhaps the right name is "yucca."

The leaves all start from a single thick root, and grow from six to twenty inches long, from a quarter to a half inch in width, and perhaps a third as thick, and at the end of each leaf is a sharp, hard point, half an inch to an inch long, that will readily punch a hole in thick cardboard. Each leaf is a spear, and this has given them still another name—Spanish bayonet.

Soon to be a Staple Crop

Since it has been found that the soapweed can be turned into money, man goes forth with a sharp mattock or adz and clips off the single root a few inches below the surface and throws out the entire plant to dry on the ground for three months. Then he collects it in bales like broom corn, loads it on a car, and ships it to market, where it is made into cordage of various kinds.

While this particular use as cordage is what has given a commercial standing to soapweed, more than a dozen uses have been found for the by-products of the plant.

As the name indicates, one of these is soap. This use has been known for centuries. The soap is made from the roots.

Thus far no attempt at cultivation has been made, mainly because the supply of native-grown weeds has not nearly been exhausted.

Beware the Choke Cherry

By C. M. Weed

THE choke cherry is one of the most abundant shrubs in the Eastern States. It abounds everywhere along fences, walls, and woods, and the taste of its astringent fruit is familiar to everyone brought up in the country. It is more or less common over the rest of the United States, being considered by good authorities the most widely distributed tree in North America.

During recent years this choke cherry has been highly recommended for orna-



mental planting in the treeless regions of the West and Northwest. Some of the Western nurseries are raising it extensively and endorsing its use in their catalogues.

This certainly seems to be unfortunate. There is probably no shrub or tree which Eastern farmers would be gladder to be rid of than the choke cherry. In most respects it is an unmitigated nuisance. It suckers so badly that a single bush soon becomes a tangle of brush. It is the favorite food plant of the pestiferous tent caterpillar, causing the pest to survive in great numbers in regions where it is killed off on the apple trees. It is also a favorite breeding place of the brown-tailed moth, which is being rapidly dispersed over the country. It is the chief source of infection of black knot, the most destructive fungous disease of cultivated cherries and plums. When wilted the leaves develop a deadly poison that causes the death of horses or cattle that eat them.

There are so many other trees and shrubs better than the choke cherry to plant for fruit or ornament that it seems worse than useless to encourage the introduction of such a menace to good farming.



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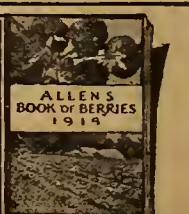
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ALLEN'S BERRY BOOK 1914

GARDENING BY T. GREINER

Onions from Seed for Sets

WE CAN grow good crops and large bulbs of onions on almost any soil if well drained and rich. We can use sandy soil, clay loam, or even well-subbed muck. But I would not undertake to raise sets on a large scale unless I had very clean sandy soil. This is on account of the difficulty in gathering and cleaning the sets grown in the heavier soils.

Silverskii, or White Portugal, is grown for white sets. Yellow Dutch, or Strasburg, and Yellow Dauvers for yellow sets, and Early Round Red and Wethersfield Red for red sets.

The ground should be fairly, not excessively, fertile. Have it well prepared and clean. Sow seed fairly early in spring with seed drill, at the rate of forty to sixty pounds per acre, making the rows a foot apart. Give clean cultivation. When tops begin to get yellow or die down, take up the little bulbs by running under the row with a rounded garden trowel, and throw them into a sieve with meshes two or three to the inch, to sift out the sand or soil. Spread in airy loft or in sieves to cure, and finally clean by running through a fanning mill or similar device.

Onions for Exhibit

The following is quoted from a Nebraska reader's letter: "I have raised onions by the transplanting method for a number of years, and almost always take first premiums on all the onions I take to the county fair. Last year I raised Gibraltar, Prizetaker, and Silver King. The Gibaltars were fine, Prizetakers a little smaller, while the Silver Kings were nice for summer use, usually selling for one cent apiece before they were ripe. I think that is the best way to dispose of them, as they begin to rot soon after ripening."

No mistake about this! There is no chance in the showroom for the person who fails to grow Gibraltar or the Prizetaker onion, in the competition for prizes for largest or mildest onions, or in the favor of customers who appreciate the sweetness of the Spanish type of onions. The Gibraltar grown by the transplanting method (new onion culture) is the real exhibition onion.

Hardy Hedge Plants

What plant will make a suitable hedge for a cold climate? The winters are severe, the soil clayey and shallow. Sometimes the thermometer drops to 30 below zero, and consequently the California privet, which otherwise is a hedge plant almost without a fault, will not do. The objection urged against evergreens is that the growth is slow. The common hemlock, however, is perhaps one of the very best among the evergreens, and it makes a fairly good growth and may be pruned in any shape desired.

The American arbor vitae also makes a fair growth, is perfectly hardy, and remarkably amenable to pruning and shaping in hedge form.

For a defensive hedge in a cold climate nothing is much superior, probably, to the honey locust. It makes a very quick growth, is very thorny, and soon makes an impenetrable barrier for stock.



"I'm dead against readin'. Every time I take up a farm paper I find out somethin' more about how much I don't know and ought to."

Big Yields from Small Space

Last summer FARM AND FIRESIDE published a letter giving some quite remarkable accomplishments in intensive gardening carried on in the Empire State by Mr. Charles G. DuMond. The production of vegetables and flowers was so unusually great that some of our readers desired fuller particulars. Mr. DuMond kindly consented to further explain his gardening operations.—EDITOR.

THE spring of 1913 I had 277 square feet planted to onions in my back yard. After two families using all they wanted I sold exactly 1,000 bunches of onions for \$45.34.

After the crop was harvested I raised several hundred bunches of radishes. As I did not keep them separate from other radishes I sold, it would be impossible for me to give you the exact number of radishes grown on this plot.

The onions and radishes were grown in beds, not rows. The beds were about two and one-half feet wide, with a path about one foot wide between beds. As onion sets and radishes grow very rapidly it is not necessary to leave space for cultivation.

I raised fully forty dollars' worth on the 160 square feet. After harvesting the two crops—onions and radishes—I set this plot to asters and had a very nice flower garden.

From my back yard, which is very small, I sold seventy-five dollars' worth of vegetables, besides having all the onions, radishes, asparagus, lettuce, Swiss chard, pie-plant, and many other vegetables we could use. We also had an abundance of flowers.

Catalpas and Other Trees

THE QUESTION: I am located in south central Iowa. I own a thirty-two-acre tract of land too rolling and cut up to be profitably farmed. It lies adjoining a grove of native timber and I am desirous of having it planted to catalpa speciosa. I proposed to a nursery company that they use the land to grow nursery stock, and in return for the use of the land to plant catalpas along with their trees and at the end of three years remove their trees and leave the catalpas to grow into timber.

But they would find it necessary to run the tree plow under all the trees to expedite the removal of their nursery stuff. The query arose: Would this tree-planting necessarily be a serious injury to the catalpas and of such vital consequence to them as to render the plan not feasible?

The tree plow would cut off every root about fifteen inches below the top of the ground. This would be done in the spring of the fourth year from planting. The catalpas when planted would be one-year-olds cut back to the ground. They would receive intensive cultivation along with the nursery stuff for three years. If their roots were severed down fifteen inches, would the trees send down other roots to take their place? No cultivation would be given after the fall of the third year, and the trees would begin the fourth year crippled by the tree plow and with their own way to make.—THOMAS DOWLER, Iowa.

THE ANSWER: Such a proposition is altogether impractical, especially from the nurseryman's standpoint. If the ground to be used for this purpose is planted with a full stand of catalpas, which in my opinion should be three and a half by seven feet apart, there would be absolutely no possibility of growing nursery stock beneath them. By the end of the second year's growth they will so completely shade the ground as to exclude all other growth.

If the catalpas are spaced more widely than this they will not develop the best form for commercial use, and the owner of the land will be the loser, as he would not be able to harvest a maximum crop. A much better way of handling the situation would be to divide the land into two fields, planting one part in catalpas and the other in nursery stock. In this way a crop of both might be produced.—CHAS. A. SCOTT



More-Finer Fruit

USE the quickest, surest, most economical method of spraying; preventing disease, blight; killing bugs; assuring bumper crops of finest fruit. 300,000 farmers, gardeners have found

Brown's Auto Spray

most efficient—Style No. 1 shown here. Capacity 4 gallons. Easily carried over shoulder. Does more work than 3 ordinary sprayers. Patented Auto Pop Nozzle—throws any kind of spray—does not clog.



Better Vegetables, Bigger Crops

Just the size for small trees, fields up to 5 acres, poultry houses, etc. For large sprayers—Brown's NON-CLOG ATOMIC NOZZLE sprays any solution without clogging. Guaranteed. 40 styles, sizes—hand—power. Write for Free Spraying Guide.

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10 Peach Trees, 4 to 5 feet, \$.98
10 Apple Trees, 5 to 6 feet, \$1.46

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SEED CORN

Highest yielding varieties. We welcome comparative tests between ours and others. Wing's Improved Whitecap has never been beaten in our fields. Wing's 120-day Yellow is earlier and was good enough to win the State Corn Contest in one-acre plots in 1912. Yield 139 bushels, 17 lbs. Our Orange is maturing for us in about 100 days and yielding practically the same as later varieties. We have some very choice 1912 stock carried over and very moderate stocks of 1913 seed. All our corn is now being cured on the patent wire hangers which insure practically perfect germination. For many years all of our corn has been bred from ear-row test plots. Write for catalog and prices.

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12 FOR 98¢ WORTH 1.75

1 Delicious, 1 Banana, 1 Baldwin, 1 Red Astorian apple; 1 York State, 1 Bradshaw plum; 1 Napoleon, 1 Montmorency cherry; 1 Bartlett pear; 1 Elberta, 1 Niagara peach; 1 Orange Quince. 12 trees, fresh dug, 34-44 ft. for \$98. Write today for 1914 Wholesale, illustrated catalog of guaranteed trees, propagated from varieties of merit, tested 29 years. Prompt Delivery Assured. Visit our Nurseries of 350 acres. Maloney Bros. & Wells Co., Box 80, Dansville, N. Y. Dansville's Pioneer Wholesale Nurseries.

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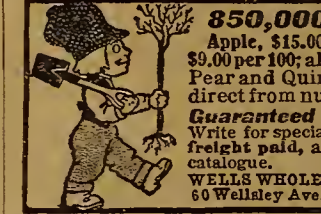
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ESTABLISHED 1856

Farm Notes

At Home in Summer

By O. A. Renahan



PURPLE martins constitute the largest member of the swallow family. During summer these fine birds are distributed over most or temperate North America east of the Rockies and in southern Canada.

Originally, these birds nested in hollow trees, in cracks about cliffs, and in caves, but they now nest in houses supplied by mankind. The red man invited the cheerful martin to remain about his tepee by erecting a pole on which he hung a hollow gourd for a nesting place, and the brave who had no summer bird twittering above his door looked for evil happenings.

In the year 1907 I erected a two-roomed box in an effort to establish a colony of these cheerful birds. Although late in the season—May 27th—one pair nested. This pair was closely guarded and protected from persecution by English sparrows, meddlesome boys, cats, and other enemies.

In 1908 two pairs nested, and in 1909 eleven pairs. The fourth season (1910) found twenty-four pairs nesting in my bird houses. Thus, by giving the birds the protection they deserved, I had, in four years, established a flourishing colony.

A store box is just as acceptable to the birds as a more expensive or ornamental



This colony house contains thirty-six rooms

house, provided, of course, the compartments are of the proper size. Make each compartment six inches square; or five and one-half inches wide, seven inches from front to rear, and six inches high, with an entrance hole two and one-fourth inches square, or, if round, two and one-half inches in diameter placed one inch above the floor. The rooms may be triangular, but remember to have them contain about the required amount of space. A perch is convenient for the martins, and can be made from wood or from No. 8 or No. 9 wire and nailed immediately beneath the doorway.

In springtime erect your bird house in a conspicuous place, from twelve to sixteen feet above the ground. Keep the English sparrows away and have patience.

The main part of my bird house is two stories high and contains twenty-four rooms—two in the gables. The round part is three stories high, each story has four rooms, and is made from veneer, but can be made from cheese boxes, or any suitable material; the roof is tin.

The martins' food consists entirely of flying insects captured while a-wing. Doctor Packard, as quoted in "Birds in Their Relations to Man," found one of the compartments of a martin box "literally packed with the dried remains of a little yellow-and-black squash beetle;" and "ten Nebraska specimens, examined by Professor Aughey, had eaten two hundred and sixty-five locusts and one hundred and sixty-one other insects." They also feed on the boll weevil and the dreaded fever-bearing mosquito.

In view of these facts, let us bring back the purple martin.

The Farmer's Friends

By Charles B. Driscoll

THE farmer has more friends, I guess, than any other man. His friends, it seems, are millionaires, and do the best they can to make the poor old farmer rich, and I can't understand why farmers with such powerful friends should ever leave the land.

Most any Congressman would die to please his rural friend. He's sworn to fight

his battles and stay with him to the end. This being true—which no one doubts, for Congressmen don't lie—I'd think the farmers would get laws to suit them by and by.

The concrete folks shell out their dough to build the farmer's roads, the railroads sympathize with him and haul his heavy loads of peaches which they taught him how to raise. With one accord the creameries throw up their hats and "holler," "Praise the Lord!" whenever Queen Prosperity camps on the farmer's trail. Then, too, the farmer should give thanks because he's out of jail.

A farmer friend was telling me he has too many friends. It costs him too much money to support them, he pretends. He said to me the other day, "These friends are dear all right! They'll rob me of my pocketbook if I don't hold on tight. My banker friend lives in a house built out of my own sweat. He always takes a nickel out of every dime I get. The owner of the packing house takes toll of all I raise. I've been working for the creameries and railroads all my days. The concrete men and Congressmen have fattened on my toil. You call them benefactors? Sir, you make my blood to boil!"

That's just the way with farmers: they don't appreciate the men who patronize them and are powerful, rich, and great.

IN SPREADING poison for cut worms, rats, and mice, on the ground, you can protect your chickens and dogs by covering the poison with wide heavy boards.

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Tuxedo

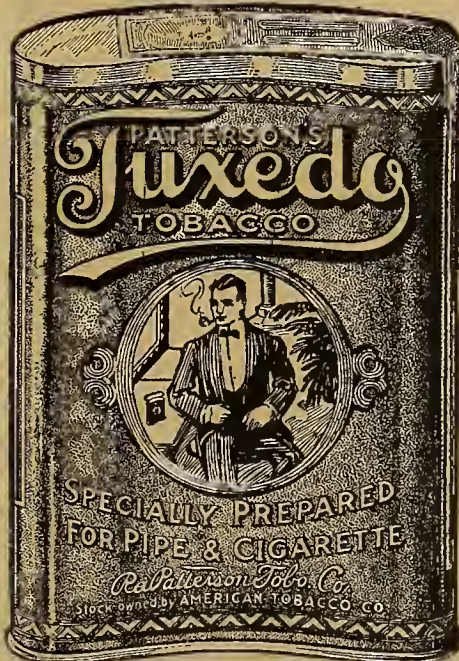
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In Glass Humidors, 50c and 90c

Illustration about one-half size of real package.

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Send us 2 cents in stamps for postage and we will mail you prepaid a souvenir tin of TUXEDO tobacco to any point in the United States.

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ex-Governor and ex-Congressman from New Mexico.

"Tuxedo appeals to me strongly on account of its cool, mild, pleasant flavor. Therein lies its superiority to all other tobaccos."

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STANTON WARBURTON
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"My own experience leads me to believe that every desirable quality is present in Tuxedo Tobacco. It is the best smoke I ever had."

S. Warburton



IRVIN S. COBB
well-known humorist and short-story writer, author of "Back Home," "Anatomy," etc.

"I can't think of any reason why I shouldn't say I like Tuxedo—because I do like it, very much."

Irvin S. Cobb

Wheel Grease

FROM HANDS AND ARMS

Quickly Removed



A brisk rub with a sprinkle of "OLD DUTCH" cleans quickly and thoroughly — leaves the skin soft and smooth.



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Farm Wit and Wisdom

Condensed and Modified from Various Sources

Home-Frozen Ice

NO HOME in a latitude which will freeze water need go without a supply of ice in the summer time, if the advice of the U. S. Department of Agriculture is heeded and acted upon.

The plan is simple. Have a tinsmith make a dozen heavy galvanized cans twenty-two inches square at the top and tapering slightly toward the bottom. The cans should be about twelve inches deep. When settled cold weather comes, arrange the cans on any convenient level piece of ground near the pump or other water supply. Fill the cans with water and after a shell of ice two inches thick has formed around the outside of each can turn them upside down and pour a little hot water on the sides and bottoms of the cans, which will cause the ice to fall out. Break the top of the shell and pour out all but about a gallon of the water. When it freezes add more until the shell becomes a solid cake of ice. While this is going on, the cans can be used for starting other cakes. A plentiful supply can be frozen in a few days of cold weather. This ice is said to be purer than that from the average pond or river. It is kept in the usual kind of ice house.

THE Wisconsin Highway Commission believes that there is a great future for the concrete road. "While the concrete road is growing in favor with the road-builders," says the chairman of the commission in "La Follette's Weekly," "the fact remains that it is still in the experimental stage. The failure of many of these roads has come through the use of dirty material." Concrete roads have been very successful in Wayne County, Michigan, and many other places.

WHERE clay is found near the place where a road is built, and there is plenty of cheap wood available, the clay can be burned on the road itself, and makes a fine highway. It takes a cord of wood for every eight linear feet of a roadbed twelve feet wide. Cordwood is laid lengthwise of the road, and flues left for the draft. The rest of the wood is laid crosswise, and the clay piled on it evenly, six or eight inches deep. Fifteen or twenty of the flues are fired at once, and when the wood has burned out the burnt clay is leveled, rounded up, and tamped. Rolling and working will make a smooth, hard road, much better than the clay alone.

WHERE the land to be drained is not more than three feet above the discharge point of the drainage, Mr. E. R. Jones, drainage engineer of the University of Wisconsin, thinks that open ditches should be used, as it is not safe to lay tile; but where the descent is greater than this the drain tile is better, and even cheaper, all things considered, than the open ditch. Consider this matter when you plan your draining.

A DAIRY-BUTTER contest was recently held by Pennsylvania State College. Sixty-eight contestants submitted samples, and of these nearly half sent in samples of four consecutive months. To all who made a score of ninety or over out of a possible hundred a diploma of merit was given. Of these there were eighteen. Miss Mary Farabaugh made a score of 92.50, and was given the first prize, a silver loving cup. One would think that in these days of school clubs the butter contest has many merits. Nothing is produced on the farm in which there is more room for improvement, and more profit. Good dairy butter always finds a market, in spite of the creameries.

THE campaign against mongrel and scrub stallions in Wisconsin is bearing results. Of the 886 sires that were enrolled in 1909 as "mongrels or scrubs," 339 have since retired from service. Dr. A. S. Alexander, FARM AND FIRESIDE's veterinary expert and contributor, started the campaign to raise the standard of stallions in Wisconsin.

SUN scorch or scald is said to be the commonest trouble with nursery stock. It comes as a dead strip on the southwest side—the "three o'clock side"—of the tree. Usually it comes from the heat and dryness of the soil in connection with hot sunlight. In the hotter and drier regions it is often avoided by planting on the north sides of hills. It is worse in sandy soils, in crowded beds in nurseries, and on raised parts of the beds. Artificial protection from the sun, low-headed trees which will shade themselves when young, plenty of humus in the

soil, and watering in trying weather are the remedies.

WISCONSIN is a great pea-growing State. It is a great factor in the canned-pea trade. The pea-growers have been greatly damaged in recent years by a blight. The state college experts, Messrs. Jones and Vaughan, have found that the disinfecting of the seed will improve matters somewhat, and that there is some prospect of breeding varieties of peas which will resist the blight; but the college press bulletin says that "if the pea-growers would ensile all of their pea straw they would be taking one of the most practicable steps for reducing the damage from pea blight in this State." This may be another of the cases in which a pest forces us to do a profitable thing.

THE statement is sometimes made that the nodules on the roots of cowpeas will inoculate the land for soy beans, just as those of sweet clover will prepare the way for alfalfa. But Doctor Whiting of the University of Illinois, after testing the matter in such a way that there seemed to be no possibility of mistake, states that there is absolutely no reason to believe the statement. He was unable to get any inoculation for soy beans from cowpea nodules. As a matter of fact, the soy-bean bacteria seem to be very different from those of the ordinary legumes. Many of the bacteria of the common legumes can be domesticated on legumes of the other sorts, but the soy-bean bacteria appear to belong to a peculiar and exclusive class.

A NEW YORK man spoiled his seed wheat by using too strong a solution of formalin in treating it for smut. Not all smuts should be treated with formalin. Some take the hot-water treatment, some are best controlled by field management, and some by formalin. The proper treatment should be adopted, and if the reader is in doubt he may write FARM AND FIRESIDE and we will advise him. The method used should be properly used, and this also we can advise those who have not had experience. The treatment is not difficult in any case, but needs to be studied—and no study will better repay the man who does it.

IF you happen to have any radium about the farm it may be well to remember that a British scientist, Mr. J. Thome Baker, has found that it may be used to increase the yield of crops. Anyhow, he has found that when a little over a grain of radium is put in a ton of soil, wheat sown in it



"Say, little boy, please save the worm for me."

will sprout a week sooner, and be six inches high when the check plot is only four inches high. Pretty soon the roll-top desk farmers will be telling us that radium is a fertilizer; but of course it is only a stimulant which enables the crop to take more out of the ground without putting anything in. In view of the fact that there are only twelve grams of radium in existence—commercially speaking—the matter isn't very important to the farmer. And yet it must be remembered that there are considerable amounts of mineral matter which carry very small quantities of radium, and one of these days agents may be about the country trying to sell it to us for our crops.

ALKALI soils are mostly found in localities of scanty rainfall. That's why they are alkaline. If they had had a superfluity of water for aeons the alkalies would have been dissolved out of them. Under irrigation the alkali may sometimes be washed out by repeated floodings. Answering an inquirer troubled with a salty or alkaline soil, an Arizona Station expert says:

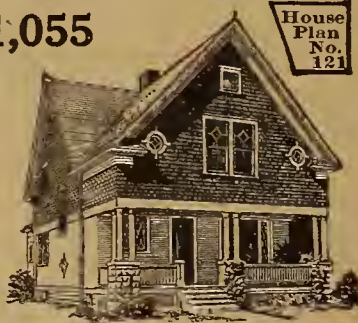
With an abundance of water available and good drainage, your best way is to border up your salty lands about eighteen or twenty inches high and repeatedly flood them. The water will soak down through the soil and carry the salts away. After six or eight such floodings the land may be planted in the usual way. Barley will be a better crop than wheat, as it is harder to alkali salts. Kafir corn, milo maize, and feterita sorghum, or possibly shallu, are all alkali resistant.

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Advice to Children—and Others

THE Texas Boys' and Girls' Clubs are getting some good advice. It won't hurt any of us to read it, whether we live in Texas or not:

Soils are often short in the supply of phosphorus, nitrogen, and sometimes potash. Nitrogen is important in stalk and leaf growth, and phosphorus for grain production. Heavy root or tuber crops like potatoes and sugar beets need a great deal of potash.

We get our nitrogen from barnyard manure, cotton-seed meal, and nitrate of soda. Phosphorus is given to the soil in barnyard manure, ground phosphate rock, and acid phosphate. Potash comes mainly in kainite, muriate, and sulphate of potash. Note that barnyard manure contains them all.

The plowing in of green crops like clover, cowpeas, and the like makes the soil more productive. That can't be done for next year's crop now, of course. The Texas experts advise applying the "boughten" fertilizers to corn, when necessary, after the crop is a foot to a foot and a half high, by mixing cotton-seed meal with twice as much acid phosphate and working it in beside the row at the second cultivation. About tasseling time another application of the same ingredients is recommended. The first application should be from 132 to 266 pounds to the acre, and the second from 66 to 133 pounds—about twice as much the first time as the second. If ready-mixed fertilizers are used, a 10-2-2 mixture is recommended.

The boys and girls in the North will not as a rule use the fertilizers. But it would be interesting to try a few rows for the purpose of observing the result.

YOUNG rats kept alone do not grow as well as they do when two or more live together. This used to be thought to be owing to their economy of heat; but this has been disproven. It is something else than heat which makes them grow better in company than alone. They sleep better, eat better and are quieter. Probably the same thing is true of colts, calves, and some adult animals. It is true of children. And in the larger scale of human society, when we achieve the triumph of living together on terms of righteousness and justice, our very numbers will make all our lives fuller and happier, as well as more prosperous.

OIL-MIXED concrete has been advocated a good deal lately for various purposes requiring water-proof qualities. W. R. Gadd, an engineer, after a good deal of observation states that animal and vegetable oils will destroy the concrete, but that mineral oils have no such effect. This would mean that in mixing concrete we are to avoid such oils as linseed, castor, and the like, and use only the heavier oils derived from petroleum.

THE disease germs which cause rabies, or hydrophobia, has at last been discovered. The great event was the fruit of the fine work of a Japanese scientist, Hideyo Noguchi, of New York. Now that this germ can be studied, there is great reason to hope that an antitoxin can be developed which will be a certain cure for the disease, not only in human beings which have been bitten by animals suffering from rabies, but in the animals themselves. Thus we should obtain a cure, and also something better than cure, prevention.

"Hard on the Land"

NOW that the sorghums—Kafir, milo, kowliang, shallu, and our old friends sweet sorghum and broom corn—are becoming such important crops, the general opinion that they are "hard on the land" becomes important. Agronomist Churchill of Oklahoma is of the opinion that farmers would not be so generally of this opinion if there were not some truth in it. In some way the sorghums, he says, seem to affect unfavorably the following crop.

Perhaps it depends on the crop which follows. Probably Mr. Churchill is right in laying great stress on plowing as a means of avoiding the bad effects complained of. He recommends that the stalks be cut with a stalk cutter as soon as possible after the crop is removed, and the field plowed from six to nine inches deep. If this plowing is very early, as it will be in southern latitudes in the case of an early-planted crop, the plowing will grow up to crab grass and other weeds. These weeds should be kept down with the disk. If this system does not succeed in killing the weeds it will be good for the field, and a second plowing should be given before the weeds mature seed.

Where the stalks are pastured after heading, the plowing will have to be delayed, but should be done in the fall, even if late, and deep plowing is recommended—Mr. Churchill does not say how deep.

"While it is not good farm practice," says Mr. Churchill, "to grow Kafir one year after another on the same soil, to our knowledge, where good methods of handling the soil are used, it has been done, and the soil was no more impoverished either chemically or physically than where corn or cotton are grown continuously. To handle sorghum soils to the best advantage rotation should

he planned which includes cowpeas at least once every three or four years. Barnyard manure should also be applied as liberally as the available supply will permit. Kafir corn can occupy the same place in the rotation as corn or cotton."

STINKING smut is reported as very bad in some parts of Missouri this past year. When it gets started it is apt to spread. Treat your seed-wheat for smut and play safe. The National Farm Paper will tell you how if you don't know. But the main thing is to think of it before seeding comes on.

WE SHOULD be glad to have the names of all our readers who have made ensilage of alfalfa, cow-peas, soy-beans, clover, velvet beans or other legumes, either in combination with corn or other crop, or alone. We are convinced that there must be a good deal of valuable experience in that line if we could compile it. Readers knowing of the successful practice of making such ensilage in their neighborhoods will confer a favor by writing us.

THE dry weather of last summer was very favorable for the maturing of a large crop of alfalfa-seed, and an abundant crop was harvested. The price of this seed will probably be lower next year than for some time.

Evading the Boll Weevil

THE early planting of cotton is advocated as a way of evading the worst ravages of the boll weevil, or at least one way of doing so. Some have advocated late planting to accomplish the same object. The U. S. D. A. experts have not believed in the latter plan, and have published a statement of an occurrence in Louisiana which seems to show that they have been right.

The land along a bayou was flooded so that the cotton could not be planted until about June. Similar land on the other side was not flooded, and was planted early. The crop on the late-planted side suffered much more from the weevils than the early-planted fields. Mr. O. H. Joffrion made 1,125 pounds per acre from fields planted



Hi Gregg is sure they ain't nothin' to this eugenics talk. Hi's bred the same cow to the same bull for seven year, an' the last calves is worse'n the first.

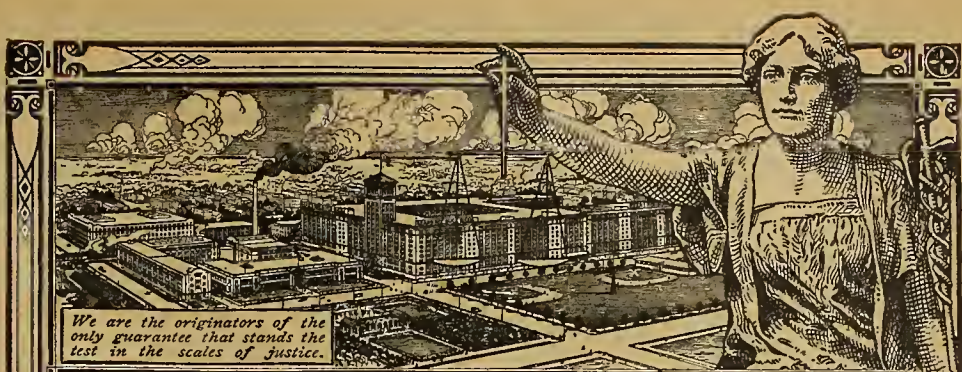
April 15th, and only 650 across the bayou where the planting was done on May 20th. Many other similar instances might have been given.

A FEW drops of aromatic spirits of ammonia taken in a half glass of water is said by a dynamite manufacturing company to be a cure for dynamite headaches. Some blasters are immune from any bad effects of using dynamite, and others must use every precaution. The blaster should wear gloves and keep from breathing the fumes of the exploding dynamite. Some blasters use gloves but will wipe perspiration off their foreheads with the gloves on, thus rubbing the nitroglycerin right into the pores of their skin. It should not be permitted to come into contact with the skin at all if one is subject to dynamite headache.

THE United States foresters have declared war on the prairie dog because it eats the grass roots so as to cause the soil to wash, and destroys a great deal of pasture. The most effective way of getting the rodents is to poison them, which can be done at a cost of five cents an acre under ordinary conditions. Carbon bisulphide gas will kill the pests, but it kills their enemies too; which is undesirable, as the latter are needed to take care of such prairie dogs as sure to be left after the most careful campaign. If the foresters can do this, why can't the farmers in the prairie-dog belt do as well?

GROUND squirrels have been killed off in the national forests on the Pacific coast at an expense of three cents an acre. Carbon bisulphide gas is just as good as poison, which is the thing used, but costs ten times as much. These squirrels not only damage crops but carry the bubonic plague.

NEVER guess at anything that is possible to know.



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David Bradley MANURE SPREADERS

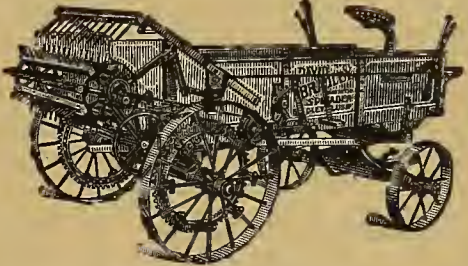
The 1914 Bradley, although strengthened, simplified and otherwise improved over previous models, sells for exactly the same prices. \$69.50 for the 55-bushel complete machine. \$74.50 for the 65-bushel size and \$42.50 for the 55-bushel spreader box.

Whether you want a complete spreader or a spreader box, you will find it in our big General Catalog, or if you prefer, send for our new Spreader and Implement Book which contains descriptions and illustrations of the complete line of Bradley plows, cultivators, harrows, spreaders, planters, etc., besides buggies, wagons, harness, gasoline engines, supplies for dairymen, poultrymen, fruit growers and bee keepers. Just say "Send me Spreader Book No. 72F78" on a postal card and mail to

LEWIS Coutant, Horton, Kansas, is one of the thousands of farmers who are thankful they purchased a David Bradley Manure Spreader.

He says the Bradley is all we claim, that it works perfectly, runs easily and is always ready for work. He wouldn't sell it for twice its price if unable to obtain another, and he thinks he saved at least \$30.00 by purchasing it in preference to any other make.

The Bradley is a two-horse machine under all conditions, rough or smooth ground, rain or shine. Any boy who can drive a team can handle it. It's guaranteed to equal any other spreader at any price, at any time, anywhere. If it doesn't, we will trade back, returning your money promptly. You are the sole judge of your own satisfaction.



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	Yield in Bushels	Complete Score Points including starch, size and cooking quality
\$100 1st Prize A. B. Cobb, Lee, Me.	502.6	690
50 2nd " O. B. Keene, Liberty, Me.	418.6	660
30 3rd " J. L. Demeritt, Saugerville, Me.	405.5	615
25 4th " Frank J. Hersey, Dexter, Me.	465.8	607
20 5th " D. L. Brett, Oxford, Me.	400.	525
15 6th " W. S. Hodges, Phillips, Me.	311.1	523
10 7th " R. J. Martin, Rochester, Vt.	331.8	520
Gratuity. Geo. E. Burditt, Rochester, Vt.	457.8	634

Southern Zone (Mass., R. I., Conn.)

	Yield in Bushels	Complete Score Points including starch, size and cooking quality
\$100 1st Prize A. W. Butler, Brockton, Mass.	363.1	589
50 2nd " Jos. Howland, Taunton, Mass.	344.9	574
30 3rd " Henry A. Wyman, Rock, Mass.	342.5	558
25 4th " Edwin L. Lewis, Taunton, Mass.	260.2	515
20 5th " W. C. Endicott, Danvers, Mass.	217.7	503
15 6th " Luther Holton, N. Franklin, Ct.	183.8	450
10 7th " Dudley P. Rogers, Danvers, Mass.	185.7	430

Send us your name for complete and instructive statement concerning the results of the contest and how these great yields of potatoes were obtained. No other fertilizer than the Stockbridge Potato Manure was used.

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Farm Notes

The Spring Feeding of Bees

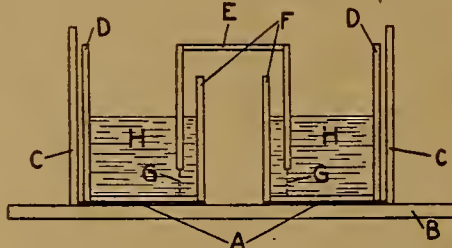
By Kenneth Hawkins

TWICE during the year bees may need feeding. In the fall to insure wintering, and in the spring to prevent spring dwindling.

At least a month before warm weather, eggs are laid within the hive, where, protected by the cluster, they hatch and replenish the waning numbers. To do this requires two things besides a good queen—first, bees to furnish the warmth, and second, food to work with while the weather yet prevents honey-gathering.

Lifting the back of the hives will give a general idea of the need of food. If colonies are too light, it is best to feed. If the weather is cold, entrance feeding is impossible, and the necessity of placing food directly over the cluster of bees is evident. This can best be done by the use of a feeder that holds sirup over the cluster, where individual bees may ascend and take up the sweet while working directly over the heat of the clustered bees. Outside of this heat bees soon become chilled and, usually failing to regain the cluster, die. This is the failing of entrance feeding in early, cold spring weather.

A feeder (DD) to answer the purpose may be constructed by anyone having mechanical ability. First find the inside measurement of your supers (CC), or the part of the hive which holds the sections or honey boxes. Construct a box open at the top, which will fit snugly inside this, closely enough to rest on narrow tin strips (A) nailed across the bottom of each super at



the ends. In the bottom of the box leave a strip open three inches wide. Inside the box nail strips (FF) on each side of this opening, tight to the bottom, which will come two inches below the top (E).

Constructing the Home-Made Feeder

Nail a similar strip from flush with the top of the box to within an inch of the bottom, a half inch inside the first strip. This leaves a passageway one-half inch wide. Flush with the top of the box, inside the last two strips, nail a strip which will close the first opening from the top of the box, leaving it open in the bottom. With bees-wax or other wax insure the water-tight qualities of the box by running the wax, melted, about all the joints of the box. Tack strips of wire screen (GG), such as is used on screen doors, to the inside of the last strips, making these come flush with the bottom of the inside of the box. The illustration shows the construction of the feeder.

When such a feeder is completed and placed on a hive, it may be filled with sirup (H) as many times as necessary, and being directly over the cluster the entrance to the feeder from below enables the bees to reach and partake of the food in coldest weather. This may be aided by feeding the sirup quite warm. The best sirup may be made from equal parts of granulated sugar and water, taking care not to heat the water above 180° F., lest the sugar scorch. This will do harm. Stir in the sugar, a small quantity at a time, until equal parts are together.

Both Methods are Economical and Handy

Entrance feeding may be done when warm days come, even if the nights are cold. Perforate the covers of fruit jars with small holes. When filled with sirup like that described above and the jar inverted in a box with a hole in the top just large enough to allow the jar to rest inverted by its shoulders, entrance feeding works to perfection. The box in which the jar is inverted should be about five inches wide, six inches long, fit snugly against the front of the hive, and have shoulders long enough to be inserted under the entrance to hold the affair in place. The sirup will seep through the tiny openings and be taken up by the bees as fast as it comes down. The flow may be regulated by the size of the holes made in the covers. The insides of the box should be waxed to prevent leakage. Dripping of sirup outside the box will incite robbing, and entire apiaries may be destroyed by the inroads of the robber bees, unless great care is used. Feeding late in the day, if possible after most of the day's flying is done, will alleviate robbing to a great extent.

These two methods are known to the entire professional beekeeping profession, are both economical and handy, and can thus be recommended to the busy farmer who realizes the need of care to bees to increase his annual honey crop.

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979-22nd St., Centerville, Ia.

The Camp Stove

By Albert Harvey

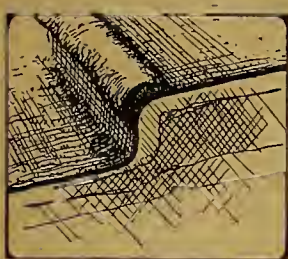
FROM old horseshoes I have made a good camping stove. Take a good-sized old horseshoe, weld a piece of old light wagon tire on the toe of the shoe. Let this iron be about fourteen inches long. Work the end to a sharp point. Bend the tire at the weld of the shoe until it is square. Drive the pointed end in the ground until it is firm. Two or three such shaped pieces may be made. Build your camp fire under them. Set your coffee pot and frying pans on top, and you have an ideal camping stove.

Hillside Ditching vs. Terracing

By N. W. Dunton

MY PLAN for the protection of hill-sides through the medium of hillside ditches is relatively simple and my reasons are brief. That rolling lands need protection from erosion is a well-known fact. Here in Georgia and all through the South the greatest drawback is the lack of a thorough system for the protection of the cultivated soils. There are two systems in general use; namely, the terrace and hillside ditch. I favor ditching when properly done.

The farm upon which I live was properly ditched by my father over thirty years ago. His system of ditching has been kept up ever since, and during these thirty years



Cross section of terrace

this land, practically speaking, has never washed. Therefore, as a natural result, this land is better to farm on now than ever before. I give this example to show that proper ditching

will protect land. The difference between a terrace and a hillside ditch is not so much in the way they are made, but in the way they are laid off, and in the effect they have. The terraces are laid off level and have a tendency to shape the ground into steps. The hillside ditches are given a slight grade. I will concede that terraces, when well sodded, will keep the soil within the bounds of the field, but I object to terracing for several reasons. First, the terrace, which is simply a long continuous mound built at right angles to the course surface water would naturally take in running off, will back water upon the land above, and in wet weather and after heavy rains this will cause the land to waterpack and become sour. Second, the upper side of the cut will wash away while the lower side will accumulate a deep soil.

Third, terraces when once well established cannot be torn away and new ones made without a great deal of soil being washed away. The illustrations show the construction of terraces as compared with hillside ditches.

The proper grade for a ditch is three fourths of an inch per rod. The surplus water will move off but no soil will move on so slight a grade. While we call them ditches, it would probably give a more correct idea to say ditch banks, for it is really the bank that does the work. The ditch part will naturally fill up when cultivation begins. It is best to plow right into the ditch and keep this part cleanly cultivated, but allow the bank to grow up in grass.

These ditches are made to empty into the land-line ditches, roadside ditches, natural sharp hollows, or into an adjacent woods, as the case may be. These are open ditches, deep enough to carry the water. If these drain ditches begin to get too deep, rock dams may be built at intervals, leaving a gap in the dam deep enough and wide enough to carry the water.

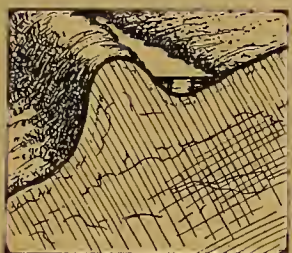
In laying off ditches I use a spirit level fixed upon a rafter-shaped frame so as to give the desired grade. The course is marked by small stakes. After this is done I go back and line up the stakes, making the zigzags give place to symmetrical curves according to the general shape of the land. Next the ditch is to be plowed up with a two-horse turning plow. This requires three round trips, throwing the dirt toward the stakes from each side. The banks should be well put up.

After the ditches have been plowed it will cost approximately three dollars per mile to make the banks with a hand scraper. They may be made with a hand scraper operated by three men, or with a small road machine drawn by a good team. The bank should be about eighteen inches high and thirty-six inches wide at the base. Extra shovel work is required where the ditch crosses a low place.

With a slight grade and a good bank, all the surplus water is taken care of, but

with the terrace the surplus water is turned on the cut below to wash the soil from the upper side and stop it at the lower side of the cut. I like a system of ditching that will protect below the ditch as well as above. If a cut of land has surplus water, the cut below will be in the same fix, and will need no extra water turned on.

Rotation of crops, deep preparation, and flat cultivation of the soil play a very important part in the preservation of the soil. The rotation or changing of ditches



Cross section of old hillside ditch

is also very important. New ditches should be made every three to six years. Land managed in this way will retain its natural shape. One should not try to reditch all the farm in one year, but should make a few new ones every year. The proper place for the new ditch is just above the old one, probably about fifteen feet. I figure that the increased yield of the crop along the old ditch will, in the first year, pay for the making of the new one.

The ditches should be turned up a little at the ends so that an inch or so of water will stand near the end after a rain. In laying off rows it is best to begin at the upper side of the cut and finish with the short rows at the lower side. This will cause each short row to carry away the surplus water direct to the ditch, and thus prevent the gathering of water and washing of the soil. It requires more work and attention to keep up a ditch than a sodded terrace, but all things worth while require attention.

The following fifteen articles of food take approximately two thirds of the expenditure for food by the average workingman's family:

Sirloin steak; round steak; rib roast; pork chops; bacon, smoked; ham, smoked; lard; wheat flour; corn meal; hens; eggs; butter; potatoes, Irish; granulated sugar; fresh milk.

For the period of the year August 15, 1912, to August 15, 1913, twelve of the fifteen articles increased in price. Sugar, flour, and corn meal declined. The greatest increase was for potatoes, which was twenty per cent., and the smallest increase was for milk, two and seven-tenths per cent. So says the U. S. Department of Labor.

Using the Parcel Post

A CALIFORNIA writer says that the parcel post is booming out there, and "everybody is using it." "The small manufacturers were the first as a class to avail themselves of the new service. Next came the retail merchants, and now the farmers are waking up to its advantages." The farmers were the people who fought hardest for it, and the retail merchants opposed it tooth and nail. Its advocates always insisted that the retailers were foolish and shortsighted in this, and the present tendencies seem to prove that the farmers knew better what was good for the retailers than the retailers themselves did. The people who are suffering most from it are the wholesalers.

In every wholesale house there is a flood of small orders from merchants for goods to be delivered direct to the consumer. Such an order is called in jobbers' parlance a "mice." There are clerks whose whole business is to attend to "mice" orders. In the mail-order houses the same plague of "mice" is found. People used to combine orders until they amounted to a hundred pounds in weight, and then got them by freight. Now they prefer to have them come by the rural carrier. At last the retail merchant has found a way to compete with all the world in delivery and smallness of order. In many ways the old methods were more convenient for wholesaler and mail-order concern, but they must adjust themselves to the new agency of trade, even though the adjustment prove expensive. In the end it will pay everybody. The farmer who has not yet "waked up" to the uses of parcel post is overlooking a very important thing.

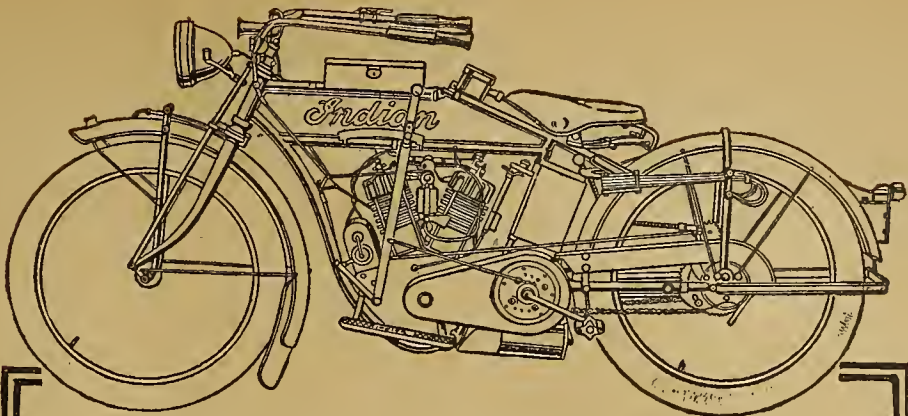
DON'T waste, but remember niggardliness is about as bad. Neither one is an asset.

Fertilizer for Tobacco Land

By Chas. E. Thorne

"I HAVE a piece of ground which I have cultivated in tobacco for two years, and I desire to put it in tobacco again," writes a Kentucky subscriber. "Now what kind of fertilizer would you use upon it? I have put a liberal supply of barnyard manure upon it. If I put some potash upon it, could I grow another crop of tobacco?"

For a fertilizer to use in connection with barnyard manure we would advise the use of acid phosphate, mixing it with manure, if possible, at the rate of forty to fifty pounds per ton of manure. The manure will carry most of the nitrogen and potash required but is deficient in phosphorus.



Rapid Transit via Indian Motorcycles

When you own an Indian you possess your own railroad or trolley line. You are independent of schedules. You can make your own time-tables—start when you please—ride as far and as fast as you like.

Mounted on an Indian you have the assurance of ample power, perfect brake control, absolute ease over the roughest roads and trustworthiness of every mechanical part.

The Indian Twin Motor has a reserve power that is equal to any demand that can be made upon it. "A twist of the wrist" gives you instantly any speed from 4 to 60 miles per hour. The smooth-acting Cradle Spring Frame, the greatest comfort feature ever devised, absorbs all road shocks and vibrations.

Indian MOTOCYCLES FOR 1914

The new Indian models for 1914 retain the many mechanical and comfort features which have given the Indian the supremacy it enjoys today. In addition they embody many new points of excellence.

Chief among the 38 Betterments for 1914 is a complete practical electric equipment consisting of electric head light, electric tail light, electric signal, storage batteries and rear-drive speedometer, fitted to all standard Indian models.

Prices, \$200 to \$325, f.o.b. factory

2,500 dealers throughout the country. 1914 Catalog ready

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JOHN DEERE TWO-WAY PLOW

The Sulky with the Steel Frame and Patent Auto Foot Frame Shift

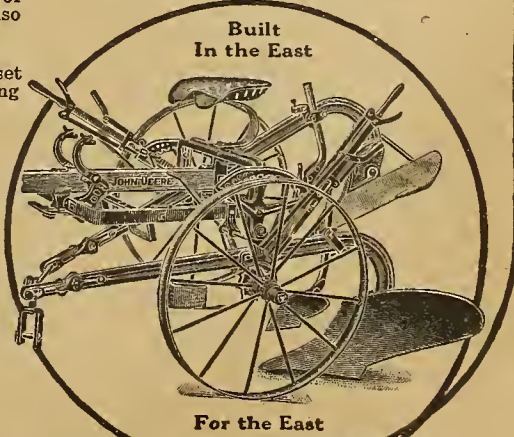
The John Deere Two-Way Plow will work equally well on hillsides and level land. It is well balanced, easy to operate, light draft and efficient,—built in the East for Eastern conditions.

It is the only two-way plow that has the Patent Auto Foot Frame Shift, which insures accurate and uniform width of cut. It will do the highest grade work for the longest time with the least possible effort and expense.

These Are Some of the Reasons:

1. All Steel and Malleable Frame—Steel Arch: Light, Strong and Durable—Rigid Connections—Permanent Alignments.
2. Patent Auto Foot Frame Shift: Slight foot pressure swings frame and accurately locates plow bottom.
3. Long Malleable Beam Clamps: No collars or set screws. Beam bolted rigidly to bracket, which extends to each hail arm. Cut always uniform.
4. Automatic Shifting Hitch: Positive and Automatic. Clevis cannot fail to move to position.
5. Automatic Horse Lift: Operator's foot releases latch. Pull of team raises bottom. Hand lever also provided.
6. Adjustable Jointers: Jointers clamped to beam. May be set forward or back or tipped at varying angles.
7. Wide Tread: Prevents tipping on hillsides and permits use of wide or narrow bottoms.
8. Chilled, Full Steel and Combination Bottoms: All styles made expressly for Eastern conditions.
9. Removable Shin Piece: Insures keen cutting edge—easily renewed—prolongs life of moldboard.

Write for John Deere Two-Way Book, handsomely illustrated in colors—and secure full information—free.

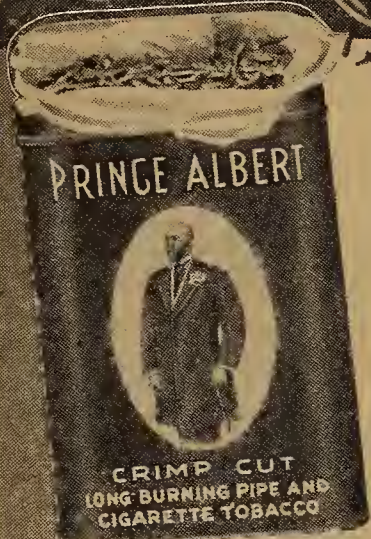


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"Better Farm Implements and How to Use Them," has 169 large pages crowded with ideas that will make you money. It cost a large sum to produce. It is yours for the asking.

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You put this over

on yourself before you're a day older, because it's *your privilege* to be jimmy pipe joy'us. If you don't own a sweet-crust old pipe, get one quick. Then pay a dime for a tidy red tin of

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Now you're ready for the fire—and the first long pull! Get that flavor, men; that freshness and fragrance. This P.A. certainly is new doings for a pipe or cigarette smoke. Go to P.A. hard, fast—any old way! P.A. can't bite your tongue. *Bite's cut out by a patented process!* No other tobacco can be like Prince Albert. *Swing on it!*

Toppy red bags, 5c; tidy red tins, 10c; also handsome pound and half-pound humidor. You can now get P.A. in every civilized country in the world.

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By special arrangement with the publishers of POULTRY HUSBANDRY, you can get this splendid paper for one year in connection with FARM AND FIRESIDE at a special reduced price. Poultry Husbandry contains splendid pointers and ideas for the raising of fine fowls. It is edited by the best authorities on poultry in America. It is chuck-full of secrets of feed-mixing, quick-growing chicks and other information of great value to everyone interested in poultry-raising.

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Bicycle Egg Delivery

By John Y. Beaty



IT IS possible to carry fifteen dozen eggs on a bicycle with safety. Mr. W. F. Jeans of Sonoma County, California, has made a case that fits onto the handle bars of his bicycle. He uses this for carrying hatching eggs, and has found that the trip does not injure the eggs

in any way. An automobile is very hard on eggs for hatching, but the trip on the bicycle does not injure the germ at all.

The case is made half the size of an ordinary thirty-dozen crate. You can make it by sawing away half of a thirty-dozen crate. The one used by Mr. Jeans, however, is made of heavier material. This box is attached to the handle bars by two hooks made of strap iron an inch and a half wide. The box is prevented from sliding sideways by cleats that fit against the front post.

A Winning Fight as a Renter

By S. E. Rhine

TRUE stories of hardships, disappointments, and bare existence are not the most enjoyable reading, but they are good mental hallast.

Here is the story of a family that was so unfortunate as to lose everything when the breadwinner was well along toward middle age. It tells the difficulties of renting a farm without the opportunity of making a selection from a reasonable number.

EDITOR.

Four years ago I lost everything but the children and their mother and a few household goods in a merchandise deal. Having spent over thirty years previous to that time on the farm I naturally turned to the farm and country for protection and help. The first offer I had was from my father. He bought a farm, one hundred and twenty-one acres of run-down stony farm land. I moved from town to this farm October, 1909, and began to work.

I cared for the stock through the winter the same as if it were my own, except that Father furnished the feed. Things went on in the same way until oat sowing, when a surprise was sprung upon me and my hopes were shattered. He said he would not trust me for the sum that the cost of the stock and utensils would amount to.

I was to feed his stock through winter for the milk of two cows, no share of young stock considered—my share of hay and all rough feed to be fed to his stock, and with free labor at that. He finally said I might own a cow or two through the winter to help eat my hay, but would not allow any hay or fodder to be sold off the farm.

I worked on, and not until June did I know definitely the compensation I was to receive. Then by close bargaining we made a contract at \$225 for my work until April 1, 1911, just a year. My privileges were my garden and potatoes, fruit of the orchard, and time off to attend to such; no privilege of driving the landlord's horses.

Before my time expired I rented a truck farm by mail in Ohio. By close and rigid economy and the sale of two hogs and our chickens and a few household goods we obtained money enough to transport the seven of us and a few meager belongings to the newly rented farm.

February 22d found me in the house of our new home in Ohio. Were we disappointed by renting by mail? Well, we will not try it again.

But in this case it was a blessing in disguise, as through that renting we had the opportunity to rent a seventy-acre farm from as fine a man as ever it has been my pleasure to meet. The farm contains forty-eight acres of farm land, the remainder pasture, orchard, and buildings.

We furnished the stock, utensils, half the fertilizer and seed, and receive one half of the grain and two thirds of the hay to do with as we wish, and all fodder to be fed on the farm. Of course, handicapped as we have been since 1909, we have had hard scratching to get stock and farm implements with which to operate the place, but through the kind help of our landlord and our good neighbors we are existing. We have managed to obtain three cheap horses, three cows, one of which is old, two heifers, bred, three spring calves, two brood sows, and some farm implements bought at public sales.

I have three boys who help me, whose ages are eight, fourteen, and sixteen; have a son and daughter older, one of whom is teaching and the other going to school.

We are farming here for the second year, and have permission for the third year. I still have the same good opinion of our landlord and neighbors. The only circumstances under which I would leave would be an opportunity to get along faster financially.

The Possibilities of Paint

By Maurice Floyd

OUR farm papers abound in pictures of palatial farm homes, and plans for their improvement; but it is seldom indeed that we see pictures of unpretentious houses or suggestions as to how they may be made better.

Yet for many years to come, if not forever, these modest houses will be the homes



of a majority of our farmers. Therefore we take pleasure in presenting this picture of a farmhouse which makes no pretensions except in the matter of paint.

Here we have an example of what a few dollars' worth of paint and a little time will do toward turning a commonplace structure into a presentable little house.

DECLARE a holiday occasionally. Remember you were a youngster once.

The Fable of the Dimensions

By Fred Telford

A CERTAIN Farmer was very proud of his broad Acres. The Weeds in his Cornfield stood as much Chance as a Fat Worm in a Chicken Yard, and the Book in which he kept the Pedigree of his Live Stock looked like a Copy of Burke's Peerage. The Farmer had all the latest Machinery, and apologized for a Week when the Gasoline Engine balked and the Hired Man blistered his Hands pumping Water for the Stock.

But off the Farm his Engine steadily back-fired. He fought Hard Roads from Early Morn to Dewy Eve. He bragged that he had never seen any Side of a College but the Outside, and he hooted at Book Farmers. He said sending a Boy to the Agricultural College was like feeding Angel Food to the Pedigreed Bull, and his favorite Amusement was to corner the Rah-Rah Boys when they came Home at Vacation Time and ask them to explain the Fourth Dimension.

One Winter the Mud was so deep for five Weeks that the Farmer could not deliver his Wheat at a Dollar a Bushel, and when the Roads became good again he took Sixty-eight Cents. But he kept up the old Line of Talk about the turned-up Cuffs on the College Boys' Pants and the Decay of Learning since the Good Old Days when the Younger Generation was satisfied with the Three R's. But his Voice was heard in the Land no longer after a Young Fellow just out of College asked him the Annual Value of the Third Dimension in Roads.

Moral: Take a good Look at the Third Dimension Roads just after the Spring Thaw before you open up about the Fourth Dimension in Space.



THE CHATHAM Grain Grader and Cleaner

Handles 70 Kinds of Seed Grain and Grass Seed From Wheat, it takes Wild Oats, Tame Oats, Cockle, Rye and Smut. Cleans the dirtiest Flax. Has special knocker and skimmer which prevents clogging. (Other machines choke up.) Takes Podder, Barn Yard Grass and Foxtail out of Alfalfa and Millet "sick as a whistle." Takes Buckhorn from Clover. Sorts Corn for Drop Planter. Fanions BEAN MILL. Handles all varieties, takes out the SPLITS, Clay, Straw, etc. Handles Peas as well as any Grain or Grass Seed. Removes foul weed seed and all shrunken, cracked and sickly grains. Takes out all dirt, dust and chaff. It is also a bulky chaffer. Handles 60 bushels per hour. Gas power or hand power. Easiest running mill.



Manson Campbell

For \$100, I Clean and Grade Your Seed Grain

You can't afford to plant common Seed and take chances on a poor crop, when I am offering to scientifically clean and grade every bushel of your Seed Grain for this spring's planting for one paltry dollar.

Here's my proposition, and if you are a smart man you will write me before sunrise tomorrow:

Send me one dollar and I will ship you, FREIGHT PAID by MYSELF, this improved 1914 Chatham Grain Grader and Cleaner, with all equipment. Clean your Seed Wheat, Oats, Flax, Barley, Peas, Beans, Corn, Grass Seed, etc. Then PLANT those fine seed. AFTER you have harvested a bumper crop, pay me the balance of my low price. Not one penny need you pay, except the \$1, until next October. And by October YOUR CHATHAM WILL HAVE MORE THAN PAID ITS ENTIRE COST IN INCREASED CROPS. Then you'll have it to work FREE for you the rest of your life.

Your Dollar Returned

I only want the dollar as evidence of good faith—to protect myself from mischievous boys. If after 30 days' hard test, you don't want my "Chatham," send it back at my expense and I will return the dollar.

A "Made-to-Order" Machine

Every "Chatham" is practically a made-to-order machine, for I send you the exact and proper Screens, Riddles, Hurdles and Sieves to grade and clean every Grain and Grass Seed grown in your locality. That's the secret of my success. I would not be the leading maker of Graders and Cleaners if I had tried to make my equipment fit ten million farms. What would you think of a clothing maker whose suits were all one size? Wouldn't it be a miracle if he gave you a fit?

Yet all makers of Graders and Cleaners, except me, send the same equipment, whether you live in Maine, Ohio or Oregon. They wouldn't do that, if they had my 41 years' experience.

Extra Screens Free

I use, all together, 81 Screens and Sieves. It usually requires 15 to 20 for the average farm. These I select from the 81. After 41 years in the business, I am pretty sure to pick the exact equipment needed on your farm. If I shouldn't, just drop me a line and I'll send your additional requirements. There will be no charge for this.

Samples Graded Free

Maybe you have some Seed Grain that you can't clean or grade or separate. Send me a sample. I will purify it and tell you how you can do it cheaply. No charge for this.

Seed Corn Sorted

My big Corn Sorting Attachment, invented 2 years ago, is a great success. Twelve thousand farmers and many leading Agricultural Colleges are using it. It is the only machine I know of which scientifically sorts seed corn for drop planters.

New Book Ready

Send me no money now—just a Postal, for the finest, most complete Book on Seed Selection I've ever written. After the Book comes, write me what size machine you want and I'll ship it, freight prepaid, on receipt of \$1.00. Then clean and grade all your Seed Grain. If you write today, you get my Book by return mail. Address nearest office.

Manson Campbell Company

Dept. 96

Detroit Kansas City Minneapolis

Our Struggle for Organization

Being an account of the experiences of the farmers of southern Florida in their fight against low prices, dishonest commission men and consignment, and for selling f. o. b.

By A. W. Potter

A MAJORITY of the southern Florida farmers are men who have come here from the North. The reason is that the "Cracker" who has always lived on the pine lands—the sand lands—has had little faith in the gigantic project to drain the immense area of the Everglades, an area as large as the whole State of Connecticut. He has "knocked" at the Glades, and he sneered at the Glade farmer when he began his planting in October, and was horrified at his attempt to raise summer crops.

The aforesaid Cracker was content to raise his single crop of tomatoes, and it was frequently a good crop, running as high as six hundred to seven hundred crates to the acre. He was also content—because he knew of no better condition—to let his packing-house man, if he had one, take his crop, pack as the manager pleased, ship where he pleased, and make such returns as he pleased. The Cracker took his returns in good grace and easy mind.

Many of the packing houses were practically owned by the commission men and the managers were mere tools in their hands.

At one great shipping point—Fort Lauderdale, the Gateway City—there was no packing house and every man was his own packer. It was "every man for himself," and the devil usually got the foremost as well as the hindmost. There was practically no selling f. o. b., and almost everything was consigned.

A Carload of Grapefruit Made a Profit of Two Cents

Unscrupulous commission men had their agents, locally known as "Tomato Buzzards," who canvassed the districts with the glittering bait of "High prices by my house." Someone, generally the first shipper, did get high prices, and the report of this return was spread over the territory. Nearly everybody followed this leader. The first returns were generally prompt and good, but afterward, when the shipments became heavy, then the produce was reported as "frozen," "had condition," "rotten," etc., until, in many instances, bills for freight came instead of cash.

One citrus fruit-grower has framed a two-cent stamp—the net return of a whole carload of grapefruit.

These conditions were more than the Northern man could stand.

We came to the Glades in the fall of 1911. When we came to Davie Farm, eight miles west of Fort Lauderdale, this farm was, as it is yet, the only spot which was drained and ready for occupancy. There were at that time less than a score of people at the place. Soon others came, and with the experiences brought from the North an association of farmers was formed—the first association on the Glades—with some fifty members, under the name of The Everglade Farmers' Central Union.

Unfortunately individual contracts had already been made with a packer and with a selling agent; so this feature was taken out of the hands of the association. The packer had his fixed price of ten cents a crate for packing and the seller received five cents for selling. The result was that the pack was unreliable, but the selling was certain, at almost any old price, with much of it consigned. Much dissatisfaction prevailed among the shippers, and constant complaints were made.

Things went from bad to worse and no one could have foretold the outcome, when, luckily for the agent, but unluckily for the cropper who had acres of produce yet un-gathered, something happened—the great flood of May, 1912, came down over the farms to the depth of six inches to two feet. Crops were ruined.

Our Association is Alive

In November the old association was re-organized and subsequently chartered under the Agricultural Act of the laws of Florida as the Everglade Vegetable Growers' Association. There is no capital stock, as the corporation was not organized for profit. No shares are issued, but on the payment of the membership fee of two dollars each member receives a membership certificate.

The association is a live one and much good has come from the mutual conference of its members at the weekly meetings. But when an attempt was made to have all produce shipped through the association the old farmers, who had been so badly bitten the year before, would have none of it. They wanted a "free lance," and said they would do their own packing and ship where they pleased. As a result, at Fort

Lauderdale thousands of crates were docked for shipment with almost as many different kind of packs as there were shippers, and no cash buyers could be found at even fair prices, for this conglomerate pack. There being no buyers, shippers were compelled to consign, and the "huzzards" halted us with the usual result.

Some of us believing in a uniform pack of high grade hired expert packers to come to our individual packing houses and make a standard pack, but because of the uncertainty of the general pack, the lowest grade giving the tone of the whole car, we suffered with the rest.

We Began to Get Disgusted

Our last returns gave us an average of sixty-six cents a crate f. o. b., for our eggplants, tomatoes, squash, and peppers. From this amount we must pay for the crate, packing, and lighterage to Fort Lauderdale, leaving us thirty-one cents a crate to pay for labor, fertilizer, and picking.

Is it any wonder that the thinking men of the association began to open their eyes to the condition which existed?

We knew that the fault lay not in the soil or the climate, for almost any kind of vegetable can be raised on the Glades for 365 days in the year. Some of our own plots made last year four full crops and a good start on the fifth. We realized that the fault lay with man and not with nature. Since it was with ourselves, it could be corrected by a united effort on the part of the farmers. With this spirit in the air it needed but a leader to organize the people. One appeared, and he aroused the county against the iniquitous practice of consignment. Organizations were effected in several towns in the county. The association at our place was the only farmers' association already organized, and it readily fell in with the new movement. Things looked bright for "Standard pack and f. o. b. sales."

A general association for the county was organized in July, 1913, by delegates from the several locals, under the name of the Southern Produce Exchange. Officers were elected and things began to move, but for some unexplainable reason the dilatoriness of the organizer allowed the whole summer to elapse with nothing done. A crisis was imminent, failure seemed certain through the inactivity of the one who was selected to do the work of the organization. It was then that the officers of the exchange opened their eyes to the condition and began to realize that the ship was sinking. The first thing they did was to throw overboard the dead wood in the shape of the recalcitrant though previously effective organizer who was steering the ship onto the rocks. The directors determined to proceed without his assistance. Our aforesaid organizer, a lawyer, had said that we could not incorporate under the Agricultural Act, but must do so under the general law for stock companies. We selected a new attorney and proceeded to incorporate under the Agricultural Act, and on November 1, 1913, we received our charter under this act.

It is Time Now to Act

This act of turning down our leader, and the fact that we made Fort Lauderdale our headquarters, led the southern end of the county to attempt an organization of its own under the general law for stock companies. At this writing this new organization is applying for articles of incorporation with a stock list of 117 members. As these two associations have the same end in view, the abolition of consignment, they ought to, and probably will, work together in peace and harmony. The present is no time for dissension.

The Southern Produce Exchange is a small but much alive organization. It comprises only a few towns in the north end of the county, but we feel that we are on the right road. Our plans are:

- A central office.
- A packing house in each district.
- Expert packers for each.
- A general manager, with a manager at each packing house.
- A general sales agent who will sell f. o. b. for cash.

A high-grade standard pack. All crates shipped through the association will be stamped with the name of the association and the name shall represent a standard pack of high grade.

It is proposed to sell only in car lots. The sales agent will keep in touch daily with all the markets of the country so as to determine the proper selling price.

There will be some disaffection,—there usually is,—but we believe that a great majority of the shippers will stand by the movement. They have had their lesson. By next spring the exchange will have proved its value and consignments will be a thing of the past.

To apologize for borrowing from a neighbor is an insult to his neighborliness; and to keep the article longer than you need it, or to return inferior quality, is a betrayal of trust.



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That is a conservative estimate. Thousands of people are making their plans to go to California during the great Expositions, and many will remain. By the end of 1915 the price of a good farm in the fertile San Joaquin Valley will have greatly advanced.

This is the carefully considered conclusion of those having the greatest possible information on the subject.

Where is the man who does not want a California home? Now is the time to get it. You can buy choice land of proven fertility and proven adaptability for a price that will never be lower. You can get it on terms that will allow you to make most of the payments out of the land itself. By developing now you should earn big profits on the farm and a heavy dividend on the advanced value within a period of three years.

There is no space here to tell you of the wonders of the San Joaquin Valley. That is why we urge you to send to-day for our books describing in detail the valley as a whole and the special industries, "Dairying" and "Poultry-raising," which have proven so profitable as major crops or as quick money-getters until an orchard can be developed.



You are under no obligation to go further; but you will get much information that must be of value to you if you will write for these books to-day and read them carefully. Then, if you wish, I will be glad to give you first-hand information about the several sections of the valley, the value of the land, the crops best adapted to the various sections, and anything else that you care to know.

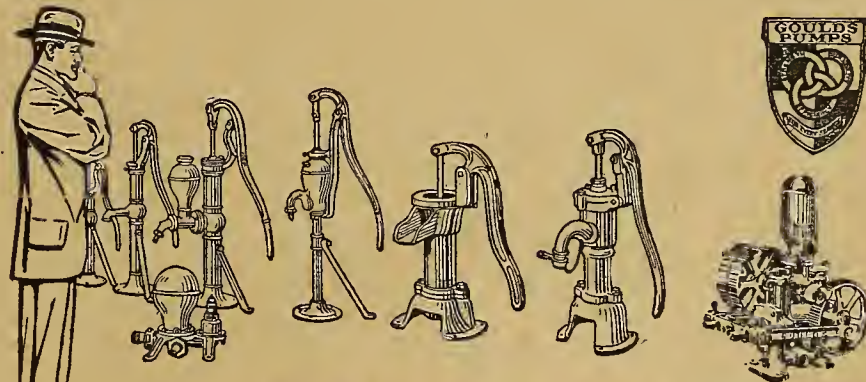
I also will tell you of the work of the Santa Fe Agricultural Department, which furnishes expert advice to those who are on the ground, and this without charge.

A post card will bring the books.

C. L. Seagraves,
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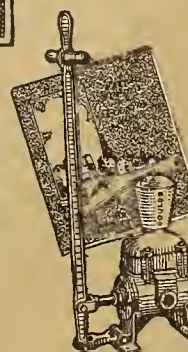
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E



The FARMERS' LOBBY.

WHAT is going to happen to the great co-operative movement among farmers when the anti-trust laws are perfected into a condition of such perfection that co-operative merchandising will be a conspiracy in restraint of trade and the principle of "personal guilt" is fully established?

By the time they get the antitrust law tightened up so that there will be no chance for a malefactor of great wealth to squeeze out of its clutches, it will likewise be so rigid and so narrow that a successful enterprise in co-operative marketing among farmers will be just about impossible.

The men who are laying out the plans for betterment of the antitrust laws are realizing these difficulties. Indeed, they have for a long time appreciated these difficulties. The answer hasn't yet been found.

The Weapon of Selfishness Was Used

LET me illustrate the set of problems that confront the lawmaker. Years ago a pioneer farmers' elevator was built in a Western village. The men who built it knew perfectly well that as soon as they were ready to do business their competitors—the great "line elevator" concerns that used to operate in close intimacy with the railroads, and that in many cases were almost subsidiaries of the roads—would hoist the price of grains in that neighborhood, and pay so much that the farmers' elevator would have to go out of business or else lose money. They knew that the "line elevator" people could afford to do that at one point, or at a few points, because they would make enough at other places where there was no such competition to compensate the losses. Further, they knew from common experience that the average man would "throw down" the co-operative elevator the very minute he was offered a half cent more for his grain at the "trust" elevator.

That was one of the most effective methods of the old elevator combination. Human selfishness was the weapon they used. A neighborhoodful of farmers would rave for ten years about how the grain-buyers skinned them; and they would be perfectly right; they were being skinned. Then a group of the farmers would start a co-operative elevator to pay honest prices, just as much as the market would honestly permit. Immediately the old elevators would begin overbidding the new one, taking the business away from it. And what happened? The average of experience proved that the man who had been loudest in denouncing monopoly and its wicked ways would be the first one to haul his grain around to the monopoly elevator, and to take its money, when it was paying a little more.

When the Cent Obscures the Dollar

IT WOULD be useless to argue with him, to tell him that he was doing the very thing that would bring prices back to the old low level, and lower. He didn't worry about that; he could see the extra half cent for his corn, right up under his eye; and it excluded all vision of the ten cents that he would lose next season. The world's full of folks that get a cent so close to their eye that it shuts out the vision of a dollar a little farther away.

Well, to get back to the device by which it was proposed to beat this scheme of the elevator combine. The organizers of the elevator association to which I have referred made this stipulation in their by-laws: That whenever the competing grain-buyers offered more than the farmers' elevator could afford to pay, any member of the co-operative association would be free to sell to the combine elevator; but when he did so he was bound to turn over to the co-operative association one half of the amount he had profited in that way.

To make the thing water-tight, they provided that the shareholder in the co-operative association who refused thus to divide up should forfeit his shares in the association's properties and profits.

You can imagine how that worked. The new elevator being built and in the market, its competitors

Co-operation is Not "Big Business"

By Judson C. Welliver

started the old game of bulging prices; and it worked to a charm. They got all the business—and lost money on every bushel of it. The co-operative crowd regularly lugged around the one half of their excess of price to their treasury, and in the aggregate it made such a big fund that the co-operative concern was earning good profits and getting ready for a handsome dividend. Yet it was handling almost no business at all!

Before long the line elevator managers learned the secret; the more they paid in order to insure their monopoly the solidier they were making the co-operative concern. The combine discovered that for once the farmers had beaten it at its own game.

That was the end of dishonestly high prices by the combine elevators. The scale fell quickly and sharply, and after that the co-operators got the privilege of handling their own business, making a reasonable margin, distributing the profits above expense of operation to the shareholders—and in the second season the line elevators at that point left the field to the co-operators.

Pretty clever and perfectly practicable, you say.

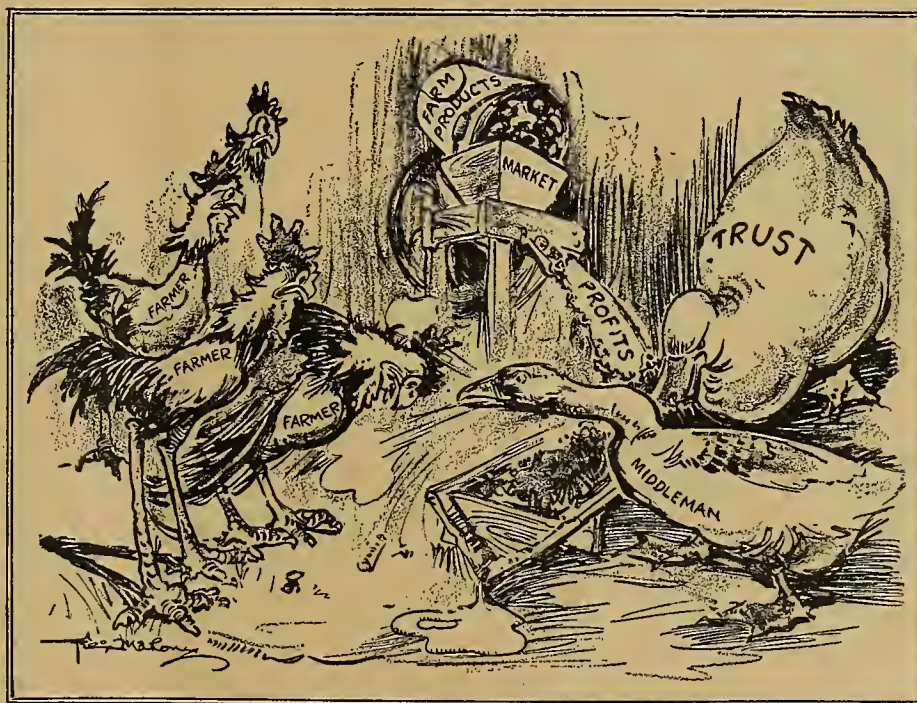
Certainly it was. But—

"Every contract, combination or conspiracy in restraint of trade among the several States," etc., is prohibited and made criminal by the Sherman Law.

The Farmers Were Using the Methods of the Trusts

THAT combination and contract among those farmers was absolutely a conspiracy in restraint of trade. No doubt of it. Their lawyers told them so, and the courts have decided the same general question repeatedly.

The farmers were employing the methods of the trusts. They were binding their co-operating members to sell in only one market, and imposing penalties in case they sold in another. Let a bunch of multimillionaires combine to do that same thing in order to control a business situation, and we would all be clamoring that they be sent to jail. Sauce for the goose wouldn't look like sauce for the gander at all.



Farmer Shanghai: "Here! Let's get together and get our share"

That one simple illustration will make my point clear. If we get a set of antitrust statutes that will kill off the millionaires' trusts we will have made laws that will just as effectively kill off co-operation.

Now, the anomaly of all this is the more striking when you hark back to the fact that Uncle Sam is expending the utmost effort to induce the farmers in the country, and the consumers in the towns, to co-operate. The Department of Agriculture is right now devoting more effort to the promotion of the co-operative movement than it ever did before. It is the pet project of Secretary Houston, and he expects confidently to make it do more for the country than any-

thing else. Practical and theoretical co-operators are being employed to teach the people just how to do it.

Do what? Violate the antitrust law!

There isn't any doubt about it. The oddest thing about it is that the people at the Department of Agriculture realize all this. Likewise do the people at the Department of Justice. Secretary Houston is diligently training and teaching the public how to do the things the antitrust law forbids, and the Attorney General is just as diligently prosecuting people for doing those same things!

Is a Successful Co-operative Project a Trust?

ALL this strange conflict over the meaning and application of the Sherman Act dates back to the time when it was passed, in 1890. It seemed that there was nothing for it except to leave the measure stand as a general, sweeping, unmodified prohibition of "contracts, combinations, and conspiracies in restraint of trade," and to trust to the good sense of the administrative officers to make sure that senseless prosecutions would not be instituted. But it's a dangerous business, this of having administrative officers make exceptions in the matter of enforcing the laws.

Some of the biggest and most successful co-operative societies in the country have been under scrutiny, at different times, by the judicial officers of the Government. As soon as one of these develops to the point where it is strong enough to stand alone, where its success is assured and its benefits to members are obvious, then somebody can be counted on to develop a grievance of some sort against it and to start trouble.

Take the case of the great California Fruit Growers' Association, the biggest and most successful co-operative agricultural organization, without doubt, in this country. Its head for a long time before his recent death was A. Frank Call, one of the ablest lawyers in the country. Mr. Call told me not long before his death how carefully his organization was framed to make certain that it did not fall within the prohibitions of the Sherman Act. To keep it outside that law was one of the big difficulties, and the Department of Justice has more than once, I am informed, received complaints that in fact this society was a "trust." What's a trust anyhow? Is any project in co-operation, as soon as it gets big enough to be successful and profitable, to be set down as a trust?

Down to this time the co-operative agricultural societies have not had serious trouble with the Government, simply because there have been so many bigger combinations to require attention. But suppose that co-operation should grow in this country to the proportions of the great co-operative movement in Great Britain!

The Co-operative Principle Must be Protected

BIGNESS, in itself, cannot be evidence of badness. If it were, our own best authorities in economic evolution would not be urging greater development of co-operative methods.

What are we to do about it, then?

It seems to be the belief of people who know most about present conditions, and who will have most to do with modification of present governmental attitudes toward these questions, that there will be in effect a frank recognition of essential differences between combinations that stand for the development of the co-operative principle and those that do not.

We are going to continue with absolute restriction of restraints of trade; but we are also going to provide administrative machinery and authorize, through that machinery, certain exceptions to be made. The discretion lodged in the agencies that constitute this machinery will be carefully guarded. It may be said that such a scheme will not work; that you can't make a law prohibit in one line and in the next line wipe out that prohibition. The answer is that you can, and that with right administration the thing does work and has worked.



The Burden of Yesterday

By Adelaide Stedman

Illustrated by R. Emmett Owen



Synopsis of Preceding Chapters

Faith Hamilton has broken her engagement to William Drake and accepted a position to teach in Honolulu because his complex and quarrelsome household have taxed her nerves past endurance. Robert Lewis, Drake's secretary, has gone out West because Ernestine Cumnock, to whom he was for a moment engaged, has denied him the right to explain his silence regarding an episode in his childhood which he thought she knew all about—his conviction in the Juvenile Court of the theft of three cream puffs. The only happy lovers are Ernestine's rich and rather vulgar father, Mr. Cumnock, and Drake's selfish and scheming sister-in-law, the widow Laura. Their romance speeds along on a trip to Mexico in Mr. Cumnock's private car, which had for its object a colossal deal in Mexican land which was thwarted by the Mexican war. The other members of the party are William Drake, Ernestine, and a former suitor of hers, Kirk Hazleton. As the train passes through the desert frontier stretches, the conductor asks for papers and magazines to throw out to isolated dwellers in these wastes. The party watches from the rear platform the delivery of these messages from civilization, and suddenly recognizes a boyish figure rushing out from a shack as Robert Lewis. He, too, recognizes those on the car. Then Ernestine, deeply moved, tells Kirk her story, and he recalls himself as the boy implicated with Robert in the childish theft. He meets temptation squarely, tells Ernestine the facts in the case and offers to leave the train, find Robert, and act as mediator.

Chapter XX.

ROBERT, too, had recognized the figures that flashed by on the luxurious private car—Kirk and Ernestine, side by side on the back platform, in the dusk. The picture and its suggestions were conclusive. As he turned away from it the parching desert dryness, already stinging his eyes and lips, seemed suddenly to reach his heart. He could not forget. The big open spaces had not healed him. The hard work in the irrigation ditches had not brought peace, only exhaustion. Far more often than he saw the mirages, born of the torrid sun, his burning brain created for him an image of Ernestine, her black curls blowing in the wind, the jack roses on her hat nodding and dancing in unison.

So, throwing the papers inside the door, he walked away over the sand hills, expecting a night of torture, thinking of seeing always that picture of Kirk and Ernestine together. Instead, to his intense amazement, peace descended on him, sudden and complete. For the first time he found the sublime night stillness soothing. A deep pity for the whole of suffering humanity stirred him, as the howl of the coyote sounded. A sense of his littleness and the littleness of his sorrow overwhelmed him, and lifting his eyes in unconscious adoration he asked in his heart the question, as old as Job, "What is man that Thou art mindful of him?"

He did not understand his own feelings. He only knew that with the renunciation of his final hope had come a sudden dazed uplifting of thought.

Then in the early morning Kirk arrived. Robert saw him when he descended from the train—and wondered. He advanced down the trail on a run, disregarding the sun. Had there been an accident?

"Hello, Hazleton," he called. "What's the trouble?" Kirk stared at Robert as he waved his hat and hurried forward. The meeting was laconic.

"Hello, Hazleton."

"Hello, Lewis." A handshake. "I came here—to see you—about—a little matter."

"Glad to see you. Come into the shade."

Kirk lifted his suitcase and walked with him to the shadow cast by the little portico projecting from the shack.

"Some climate you have here! My pocket thermometer ran up to high G and then exploded."

Both men laughed, glad to relieve the tension. Robert called to a peon in Spanish to bring water for the horse, and himself drew a dipperful from the oyer, an earthenware vessel, for his guest.

Drinking it gratefully, Kirk began. "You—saw us—when the train went by yesterday."

Robert understood the meaning of the slightly-accented "us."

"Yes."

Kirk lifted his eyes, reading the quiet resignation on Robert's face.

"Well, you saw—wrong."

"What do you mean?" The dazzling tints of a rainbow danced before his eyes.

"We're in the same boat, Lewis. I just heard that cream-puff story—and—I—was the other boy."

The rainbow vanished before Robert's vision. "Oh, that's it," he muttered. "Awfully decent of you to come here and explain, old man, but I knew it before I left New York."

"You knew?" The full meaning of the words reached Kirk slowly. Robert was looking off into that distance he had questioned the night before. His face was strong.

"I couldn't have done it," Kirk admitted finally. "But—well, she knows now—and she said, 'Robert must hate me for being so unjust.' I've had my inning and lost. It's your turn now."

"Hazleton," Robert questioned swiftly, "this isn't some quixotic notion you got hold of to make up to me for what you think I've gone through?"

Kirk laughed shortly. "I'm not a hero. I wouldn't be here—if I had a—chance."

"Yes, you would." One of Robert's sinewy hands closed over Kirk's shoulder in unconscious imitation of Mr. Drake's familiar gesture. "You've given me faith. You stole once just as I did—and you've turned out square. Then I can too. You've made me stop being afraid of myself." He drew a long breath and let his arm fall from Kirk's shoulder.

Hazleton, trained to artificial constraint, ashamed of his own emotion and of Robert's, broke in uneasily: "Glad to hear it. I guess you've done well here. I'd like to see something of your diggings before I go."

"Certainly," Robert agreed. "And I want you to meet the boss. He's here on an inspection tour."

The shrill tooting of a little whistle interrupted them. About twenty-four Mexican peons came out of the four smaller shacks, which, with two larger ones, composed the settlement.

"Work beginning," Robert explained. "Come over and meet Mr. King." The formalities gone through with in the doorway of the largest shack, Robert said diffidently: "Mr. Hazleton has brought me news that makes it—rather necessary for me to go to Los Angeles for a few days. Can I get leave of absence, sir, without any trouble?"

"Not easily, but possibly. How important is the business?"

The young man turned crimson without seeming to find an answer, and looking from him to Kirk, scarlet also, King seemed suddenly to understand and remarked with twinkling eyes: "Oh, the most important business in the world! You can go, my boy." Then, with a nod, he hurried off, calling back, "Come over to Section K, and mess with me at noon."

Kirk walked out to the irrigation ditches with Robert, and on the way Robert eagerly asked for all news of Mr. Drake. In response to his questions Kirk told him all he felt was discreet of the unfortunate Mexican adventure, and of Faith's being ready to sail for Honolulu.

Robert's own prospective happiness sank into the background. He was profoundly troubled.

"It's a shame!" he muttered over and over again. "He doesn't deserve it!"

At noon when they joined Mr. King his mind was still on his old

employer's difficulties and consequently the conversation turned largely on Mr. Drake.

At three, Kirk and Robert rode off to the railroad station. Mr. King waved them away after handing to Robert a letter for Mr. Drake.

"It's your letter of recommendation and a few personal lines," he explained. "Now good-by—and good luck!"

Chapter XXI.

WHEN Robert and Kirk entered the lobby of the Carlyle Hotel in Los Angeles, looking up to the mezzanine balcony which circles the open foyer, they saw Ernestine sitting in one of the great red velvet chairs, gazing idly at the moon face of a big clock near-by.

The intensity of Robert's look seemed to act like a spoken word, for she turned around and their glances met—and held. And when he turned away, after having caused several loungers some moments of secret amusement, it was to see Kirk disappearing into an elevator, which immediately shot upward. A little dazed, his heart pounding, Robert found some marble steps, evidently leading to the balcony, and hastened up them. In a moment he was beside the red velvet chair, but Ernestine had disappeared. A glance around the circle did not reveal her. Then, looking through the heavily curtained doorway of a deserted drawing-room, he saw her standing, half concealed by the window draperies at its far end. Never was there such a long room. It seemed miles to its end—and Ernestine. But finally he was beside her, and suddenly his blazing ardor vanished to be replaced by an abashed shyness.

"Ernestine, are you glad to see me?" he questioned lamely.

The girl gave a half-laughing sob, which seemed to be a satisfactory answer, for all of Robert's boldness returned. He kissed her. He mounted straight up to heaven with her in his arms. Then came confessions, explanations, and plans to "tell father"—and Robert's sudden eagerness to see Mr. Drake.

Together they went to the drawing-room of the Cumnock suite, where the rest of the party were talking, or, rather, Kirk seemed to have been talking—and the rest listening, and from the lack of surprise and the approbation with which his coming was received Robert guessed what Hazleton had been telling.

Mr. Cumnock heard their news with unexpected mildness.

"Well," he smiled, "if Erny's happy I guess I am. After all, everybody's got to choose for himself, and I'm glad Erny's settled—because—well, the fact is—" He grew red and stammered out his finish like a shamed schoolboy: "Laura—is Mrs. Cumnock now!"

The intense surprise and the exclamations that followed this astonishing announcement were not exactly complimentary to the lady. She, of course, immediately burst out crying, begging Will to please forgive the secrecy and Ernestine to love her.

"But when did it all happen?" Drake gasped.

"That day—on the border of Mexico, when you were examining the land," Cumnock explained. "Laura's mighty sweet and sympathetic—and—"

"And Chester's so good!" Laura sobbed. "He's going to make me so happy. We're going to Europe for our—honeymoon."

"I'm afraid not, since this Mexican land deal fell through," Cumnock interrupted.

"You mean it made such a difference to you—financially?" Laura's question was a little shrill.

"I should say so! We'll have to honeymoon on my Arizona ranch instead, and live there maybe for a couple of years, until this Mexican situation clears up. As far as I'm concerned it suits me better."

Laura's face was a study. The daydreams which had led her to angle for Chester Cumnock vanished and she began to understand the meaning of the word retribution. She knew that he was a man no tears of hers could move, once he had made up his mind. Jobyna Price's country home would have been a paradise beside this dreadful Western idea of roughing it, yet she must smile and pretend to be happy—always pretend for the rest of her life.

With Laura so suddenly disposed of and only too glad to leave Florence with her grandmother, Drake's thoughts traveled to Faith with fresh pain. Why couldn't Laura's marriage have come a little sooner? Now his distrust of his own fortune made him fear to ask Faith to try again. Something would immediately go wrong.

After the first hours of Robert's leave Drake succeeded in separating him from Ernestine, and the two men set out on a long walk, talking as they went.

Drake tried to respond to his protégé's vivid glowing happiness and, refusing to say much about himself, made Robert talk of his hopes and plans, and made him tell the story of Kirk's renunciation.

"Of course you can't come back to me in New York any more. You'll have to be earning more money," Drake said, just as they returned to the hotel.

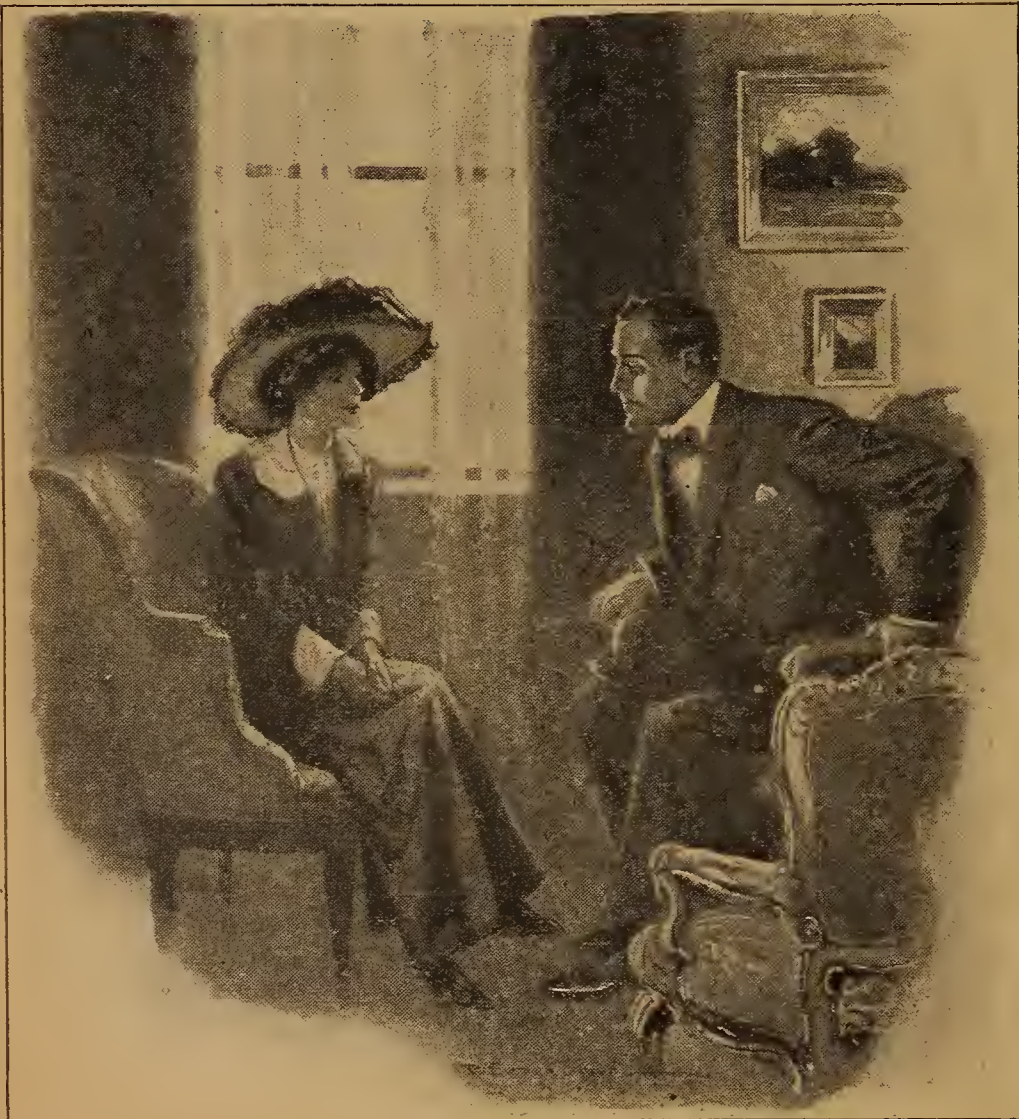
"That's what's worrying me. I'd rather be in your office than have the biggest job going, but—I must make more money. Nevertheless, if you need me, sir, back I go. Ernestine and I can wait."

Drake laughed tolerantly.

"Much good you'd be in business while you were—waiting! Go ahead, son, and be happy, and by all means keep the splendid place you have with the G. and O. people. They're the best land irrigation firm in the country."

They had reached Robert's room and suddenly his old employer's words recalled to Robert the letter Mr. King had given him.

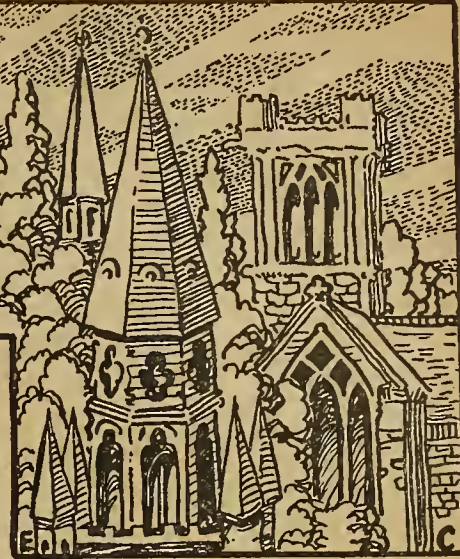
"I have a letter here from the chief. I almost forgot to give it to you," he explained. [CONTINUED ON PAGE 40]



"I'll marry you this minute"



Messages for Sunday



Sunday-school lesson, February 15th: Christ's Hatred of Shams. Luke 11, 37-54.

Golden Text: Be not deceived, God is not mocked.

A Jewish Society

THE story of the Gospels is an out-of-door story. Only a few scenes take place beneath a roof, and with most of these we have the sense that the house is but a temporary shelter, and in a few moments the actors will return to ordinary Oriental living, in the fields and the streets, on the porches and on the housetops. But now and again there is an incident that must have taken place wholly within doors, and such is the story of the meal at the Pharisee's house.

The word Pharisee is a synonym for narrowness, formalism, and insincerity, but it would be difficult for most of us, well as we know the name, to give its accurate definition. The Pharisees were members of a society that flourished for several hundred years in Palestine and wielded extraordinary social, religious, and political influence. Its members were for the most part men of learning and they had gathered to themselves wealth and power. The people looked up to them as leaders, and under their régime the Hebrew religion had become largely a dry, unspiritual religion—a matter of petty rules and formal observances.

These rabbis, as they were always called, wore an especial and noticeable costume. The bits of symbolic blue and white fringe that was common in the dress of all devout Jews became a matter of ornate decoration, and of superstitious regard. The phylacteries, of which so much mention is made, were tiny cases containing passages of Scripture, bound to the forehead and the right wrist by leather bands and worn constantly save on the Sabbath. Originally prayers, they had degenerated into charms that insured good to the wearer. These rabbis went proudly among the people, holding themselves aloof from all who were not of their order, devoting themselves to an endless round of ceremonies and stopping in the street or wherever they chanced to be to perform their devotions at their appointed times.

The Man of Galilee

Little in common could there be between such a party and the fearless Teacher of the plain people. Though the Pharisees had entered into many public debates with Christ, debates in which they had won little applause, they had not decided just how to deal with the troublesome newcomer. It may have occurred to one of them little acquainted with the Preacher that an invitation to a great man's house would impress Him, and so He was asked apparently for the simple Sabbath morning meal to which guests were often invited after the synagogue service. There gathered quite a company of persons of importance, curious to meet this Galilean carpenter.

One can picture the anger of the scribes and of the interpreters of the law, when the stranger ignored the usual washing of hands that the Pharisees had changed from a simple custom to an essential rite and surrounded with all sorts of foolish superstitions. Christ had met their public questionings fearlessly, but here He had gone farther. He had thrown down the gauntlet to the most powerful body in Palestine. The defiance was open and intentional. Henceforth there could be no pretense of patience or friendliness between them.

Terrible were the words that rang through that luxurious room that winter morning, but not more damning than the arraignments of these heartless rabbis by writers of their own time. Christ was not only opposing a religion of the whole life to a religion of hypocrisy, but He was the spokesman for the voiceless people against those who had stolen from them the key of knowledge and laid upon their ignorant and humble shoulders burdens too grievous to be borne.

Sunday-school lesson, March 1st: Faith Destroying Fear. Luke 12, 1-12.

Golden Text: Everyone who shall confess me before men I shall confess him before the angels of God.

Fearlessness

THE account reads as though the multitude so great "that the people trod one upon another" had gathered waiting the coming of Christ from the Pharisee's house. This visit was very likely a matter of curiosity, and there might well have been questioning as to whether it would change the new Teacher's attitude toward the old leaders. As if this were the case, and

as though seeing their eagerness, Christ plunged at once into the topic uppermost in their minds and in His, the religious teachings of the rabbis. Whether the entire passage be one address or several, the judgment on the hypocrisy of the leaders of the Jewish church is a splendid illustration of the ringing words that follow, "Be not afraid of them that kill the body, but after that have no more that they can do." This is the doctrine that makes heroes. Life takes on a new grandeur when we cease to be careful for it. Instead of a mere matter of breathing, eating, enjoying, it becomes the field of justice, truth, wisdom, courage. Martin Luther's sturdy verses, known to all Germans, gives this heroic spirit which is Christ's own, a spirit which is not enough emphasized, which we overlook, intent upon his tenderness.

And were the world all devils o'er,
And watching to devour us,
We'd lay it not to heart so sore,
Not they can overpower us.
And though they take our life,
Goods, honor, children, wife,
These things shall vanish all,
The city of God remaineth.

The power, the insight, the real intelligence of a person are pretty well measured by the value and possibility he sees in the bit of the world right around him. Most of us have to be taught the meaning of what is always under our eyes. Christ lived His few

God in heaven cared for these myriads of twittering creatures, He was indeed a father, and never again would any hearer look upon the imprisoned birds without remembering the words of the Master.

One Man's Task

By Anna B. Taft

THIS is the story of a country minister in the State of Ohio who accomplished the impossible and wrung success out of a situation more difficult than the average country minister finds.

The day is past when our conception of a church is merely a roof over a pulpit. We are coming to recognize more and more the importance of a pastor living with his people, if we are to have a community-building country church.

But however vividly we may see the impossibility of the old circuit-rider system fitting into present country-life conditions, we shall have to face for some time to come the dividing up of a minister among several churches. Therefore the question of importance is, How can this fractional ministry be of greatest service to each individual church and the larger group?

Within a radius of ten miles are located four small country churches of one denomination. These four churches were all receiving Home Missionary aid, and the two pastors ministering there were living in towns away from the fields. Mr. Brown, as we will call the pastor, looked over the field, shook the dust of the

tow from his feet, located in the community nearest to the center of the group, and began a service to these various people, uniting them just so far as possible into one parish. He called it the Springfield Group of Churches. Every week he had a column in the county paper, and the doings of the people in the four communities was given with special emphasis on the church life.

In order to increase this feeling of oneness, once a year each of the churches entertained the other three for an all-day session. That meant an inspiring meeting once a quarter. Special pains were taken to put up a very inviting program, largely of local talent, though sometimes a speaker from outside was obtained and a type of country life institute held. The ladies of the entertaining church prepared a big dinner, and there was a wholesome and honest rivalry as to which church could give the group the happiest and most satisfactory time. Sometimes the gathering was held out of doors. Can't you see just what this meant to four little half-dead churches, struggling along wrapped up in their own all too small interests? It was a new lease of life; it was dignity and enlargement.

Mr. Brown was not so shortsighted a man that he thought a good whole could be made of poor units. Not for one minute did he relinquish his local work. Just as firmly as he believed in group unity he believed in community unity. How could he teach the great lesson of the brotherliness of common labor through his church? How could he make a community-serving church out of one that was in the midst of a little community that proudly boasted of four churches where they had not sufficient means to support one, each church standing for its own particular "ism," with no co-operation and with the normal amount of jealousy that grows out of such a condition? Obviously unity must be born of interests common to them all. Under Mr. Brown's leadership a Federal Council was formed and by its aid the spirit between the churches was greatly improved. Together they worked for a Public Library, a Law and Order League, and a one-time Village Improvement Society was resurrected from the dead past. Mr. Brown did not forget the young people. He started a Boys' Brigade and took the boys camping in the summer.

In another of the communities he was serving there were two churches; the second church without a pastor. Mr. Brown, holding firmly his ideal of community service, organized a Brotherhood, open to all the men of the community, meeting every month, discussing practical subjects. He also awakened his own people to the need of renovating the church, excavating a good basement and equipping it for church parlors, a needed social center for the community. Mr. Brown's fine spirit of co-operation won over the other church, and they sent him a request asking him to preach to a united congregation. This he gladly accepted, and the people of the second church attended his services in a body.

The other two churches in the group had no rivals in their locality, but the lesson was fundamentally the same—that of serving the whole community instead of the fractional portion identified with the church.

O Captain! My Captain!

O CAPTAIN! my Captain! our fearful trip is done,
The ship has weather'd every rack, the prize we sought is won,
The port is near, the bells I hear, the people all exulting,
While follow eyes the steady keel, the vessel grim and daring;
But O heart! heart! heart!
O the bleeding drops of red,
Where on the deck my Captain lies,
Fallen cold and dead.

O Captain! my Captain! rise up and hear the bells;
Rise up—for you the flag is flung—for you the bugle trills,
For you bouquets and ribbon'd wreaths—for you the shores a-crowding,
For you they call, the swaying mass, their eager faces turning;
Here Captain! dear father!
This arm beneath your head!
It is some dream that on the deck
You've fallen cold and dead.

My Captain does not answer, his lips are pale and still,
My father does not feel my arm, he has no pulse nor will,
The ship is anchor'd safe and sound, its voyage closed and done,
From fearful trip the victor ship comes in with object won;
Exalt O shores, and ring O bells!
But I with mournful tread,
Walk the deck my Captain lies,
Fallen cold and dead.



Written on the death of Lincoln by Walt Whitman

years in the country, amid a farming people, for there was no manufacturing, and cities, such as we know them, did not exist. Life even in the few closely built walled towns of that time was very simple, and the people to whom He spoke knew little of the world lying beyond the Jordan Valley. So His illustrations were drawn directly from common life, and vivid indeed must have been His words to the men and women who stopped midway in their day's work to listen when He came near.

They understood perfectly what He meant by hypocrisy, a leaven, an insidious unseen influence that enters into and alters the nature, even as the yeast, unseen, transforms the dough. Again there could not have been a more touching or a more telling illustration of the all-embracing love of the Heavenly Father He was trying to make known to the world than the sparrows. Children made a business of catching these tiny birds, and they were sold in little wooden cages outside of every synagogue. They were the least sacrifice that could be offered, only the poorest of the worshippers, often the lepers, buying them, and there is a truly modern touch in the price, two for a penny, five for two pence. Surely if the



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A Supper for Sleighing Parties

By Emma Sanderson



MRS. ALLEN lives in the country six miles from the nearest town. Through the summer she takes boarders, but that left her without spending money nine months in the year until her idea came. She had one talent—she could cook well. She let it be known that upon reasonable notification she would receive parties for chicken suppers through these unremunerative months, sleigh-ride parties, straw-ride parties, and automobile parties. Almost from the first it was a success, partly because the suppers are so good, partly because Mrs. Allen is businesslike. She charges a certain reasonable amount when she furnishes the entire meal. Some of her patrons prefer to reduce the cost by bringing cakes, salads, and extras themselves. In these cases Mrs. Allen serves chicken, potatoes, and coffee at a lower figure. A telephone was installed, which is a great convenience in making arrangements and increases the trade. At the first tinkle of a sleigh bell Mr. Allen is on hand with a lantern to help unload the sleigh and show the way to house and barn. Inside, the

guests find everything ready for their convenience: a room with a mirror and pins in which to remove their wraps, a warm dining-room with table set and also a side table holding piles of plates, spoons, and forks where the extra dishes can be prepared. A place is also made ready where the drivers of the sleighs can be taken care of.

There is hardly a night while the sleighing is good that a merry party does not patronize the place, and the straw-riders come, between times. The teachers' club holds its annual festivity out there, the church societies have sociables, the bridge clubs love to go for a change of scene, and young people's parties are a steady source of income. A few notices sent to churches and schools in the near-by town started the trade, and then one pleased patron told another. Mrs. Allen now has a neighbor's wife to help her serve the supper, and they agree that while the money is a blessing, the life and gaiety in the old farmhouse on long winter evenings, which formerly were often lonely, is almost as good as to have as the income.

Corn Lady's Letter—By Jessie Field

February 14, 1914.

DEAR SUE GIRL: Well, I'm just so excited I hardly know how to tell you about it. You see, it all happened because we did get so interested in reading, that we saw what was back of what we read. Then we found there were so many, many very interesting free bulletins sent out by our State College of Agriculture and the United States Department of Agriculture, and these were even more interesting to read than our books when we saw down underneath them, for they had such wonderful things about our farming and our homes.

Of course I've always known there were these bulletins, but I'll confess I did not know myself they were so interesting and on so many, many subjects until a nice Congressman sent one of our farmers a set of bound United States Department of Agriculture Farm Bulletins, and he loaned them to us. I've told you about the boy that came back to school this winter. The big dark-faced boy whom the former teacher had been compelled to take the poker to, it is said, and who left school three years ago. Well, I was worried about him for a long time. He was so somber and unresponsive, I thought I should never see any gleam on his face.

Now, would you believe it, Sue?—Farm Bulletins brought the gleam. The first time he became really interested was when he was reading the bulletin on "The Feeding of Cattle." He said, "There is some sense in this," and then I let him sit right by our Farm Bulletin rack that the boys had made. And he is just devouring them all. He says he can hardly wait until he can try some of them out.

"So you really want to be a farmer, do you?" I asked.

"Yes," he replied, "I'm seeing more in it every day. I've decided I'd rather be a good farmer than anything else in the world."

He will be a good one, too, for he really thinks things out for himself. If he keeps on he will be able to be a real leader for the best things for country people. My dark-faced boy changed into a farmer leader to be, in whose face is the gleam of light—that's what Farm Bulletins did. Now, you must not wait a day to get them in your school too.

They do not cost anything, you know. You just send your name and address to the United States Department of Agri-

culture, Washington, D. C., and ask them for a list of their available Farm Bulletins. Then order the ones you want. Your farmers can send for them too. We are using them in our literary society programs.

The very best things of all is the Card Catalog of Farm Bulletins we secured from the United States Department of Agriculture. It cost five dollars, and we bought it out of some money we had from an entertainment. It is a complete card index of all subjects treated in Farm Bulletins, arranged alphabetically and with reference to the number of the bulletin in which the information is found. So if John gets interested in how to grow alfalfa and its value for feeding, he looks up "Alfalfa" in the card index, and it tells all the numbers of the bulletins in which anything about alfalfa is found and along what line each bulletin treats of alfalfa. Then John sends a postal card for these bulletins, and he can have them when they come.

Florence was interested in a model kitchen, and she looked that up and found a number of bulletins that had something about it in. This complete card index has always been in the Congressional Library, but only recently could anyone else have it. You see, it is in a neat box and takes up only a little room, and it offers such great resources in reading for any country school and community. I know from experience that it is the best investment a country school can make.

Our own state bulletins have been a very definite help too, because they are so suited to our local needs. We have found some other good country reading too. One we are caring most for is "Poems of Country Life," published by The MacMillan Company. But do not fail to get the card index just as soon as you can. It is best of all.

The conclusion I have come to about all this as a country teacher is that it is fine to get pupils interested in reading, but it is best of all to get them interested in reading the things that will help make them see how farming can be more productive and businesslike, and farm homes more efficient and helpful. Isn't it the most fun to be a country teacher?

I feel so happy I'd like to try making some snow "angels" like those we used to make when we were little girls walking on top of the snow banks by the roadside to our country school. HELEN.



WHY?

The Little Friends Laughed to See the Sport, and the Knife Ran Away with the Pie—By Catherine O'Rieley

MAY I say a few words about the training of children, especially in regard to their table manners? I have seen tramps who, invited to a farmer's table, shoveled food into their mouths with a knife; poured tea and coffee into saucers, in the process of which the tablecloth received a generous share, and then carried it to the mouth and inhaled it in great, noisy gasps, and swallowed food in lumps that would strangle a boa constrictor. For such we can feel sorry, for they perhaps have had no early training.

I have seen an occasional hired hand on a farm insert his knife to an astonishing depth in his mouth, draw it out lingeringly over a flattened tongue, and after releasing it lovingly and suckingly, plunge it to the hilt in the plate of family butter.

This was nauseating. But what are we to think of the well-to-do farmer under his own vine and fig tree who not only does these things, and worse, himself, but brings up his children to behave in the same outrageous fashion? I have sat at the table of the average farmer and pretended to enjoy his choice fruits and vegetables, his savory roasts and soups, when it was as much as I could do to keep from rushing into the outer world and casting up my accounts. At another average farmer's table I have sat and calculated which could make the greatest and most disgusting sound taking nourishment—mine host or a mortgage lifter I had at home, together with her ten little porkers, neck deep in a pail of fresh milk carelessly set down for a new calf's breakfast.

Can People "Do as They Please?"

Farmers in general set a person down as either crazy or "stuck up" who advocates good manners at the table. "This way is good 'nuff fer me;" "I like to be comfortuble at my meals;" "I'm at my own table an' I guess I c'n do's I please." Yes, but I'll venture to say that some dinner guests they've had will manage to squirm out of it when invited again.

Why can't farmers be as decent as anyone else when at the table? Why must they take their soup noisily and drip and slobber it around the table; or, elbows firmly braced at either side of their plates, their meat in their fingers, tear and gnaw like some wild animal? Or why must they convey pie to their mouths on the end of a knife instead of taking it carefully with a fork? One

faults used as a topic for amusing conversation among acquaintances when her back is turned.

When a girlhood friend unexpectedly dropped in at suppertime, tired Mary Jones confusedly exclaimed, "I'm always afraid someone will come and catch us eating off an oilcloth! I hate it so, but I cannot help it. I'm not as young as I once was. When I had my strength I used to have the whitest table linens around. My dear, I've had six tablecloths a week to wash, until this summer I couldn't stand it any more. I just had to draw the line somewhere. Oh," to a remark, "John is so—so peculiar that way! I don't say anything now, any more. But," wistfully, "if he only wouldn't scold when I try to teach my boys table manners." Is it fair to make the farm woman wear blisters on every knuckle in keeping her linen white?



"I'm always afraid someone will catch us eating off oilcloth"

I've been at tables where chicken or game was served when the family made such noises over the bones and joints that I could scarcely swallow a bite. One man I know is particularly fond of chicken necks, principally, I am forced to believe, because he enjoys separating the many vertebrae and gleefully chewing and sucking each individual bone. Joints of fowl wings and the legs of game are also delightful to him. I'll not undertake to speak for his family.

Now all of this, as anyone can see, is but the result of carelessness, and a lack of self-respect. It is not necessary. It does not save the farmer either time or money. It does not add to his comfort, his bank account, or his chance of going to heaven. It makes untold extra work in washing and ironing, for his wife; and, above all, it is a serious drawback to the future of his children. Children copy "Papa" in everything, "Mama" also. If they see the father eating pie with a knife and drinking out of his saucer, and the mother sopping her bread, cookies, and cake into her teacup, that is just what you may expect to see them do also. And wherever they may go, whatever place in life they may fill later, the careful observer will know just what kind of home and parents those children had.

Her husband's faults used as a topic of amusing conversation

does not have to be "proud" or "stuck up" to be unoffensive at mealtime. What must we think when a farmer's wife confides that she can hardly bring herself to invite guests to a meal at her house "because John has such bad habits at the table"? It is not false pride which makes her hesitate: it is self-respect. No woman wants her husband's

We try to be up-to-date in our farms, our homes, our stock and machinery, in the churches we attend and the schools to which we send our children. But up-to-date we are not, and never shall be, until we set our children the example of good or at least inoffensive manners at

the table. This is no plea for "polish," for "big feelin's," for "being too big for our clothes," but for the plain, common-sense decencies of life, which can be cultivated on the American farm as nowhere else.

Make the Thermometer Useful

By Charles Cristadoro

A WOMAN at home can employ a thermometer and get the same regular and uniform results as the baker. Procure a dairy thermometer, which may cost twenty-five to thirty-five cents. Remove the wooden casing that is added for the convenient handling of the dairyman or the cheese-maker. Hang it in what is usually the coolest spot in the kitchen, and in plain sight, where it can be quickly referred to. The housewife refers to the thermometer and reads 80°;

that's how warm her kitchen is. She fills the flour into her bread-pan and puts the thermometer in the flour for just one minute, and she finds the flour is, say, 70°. Now the problem is, "How hot should the water and milk be?" You want to set your dough at 90°. Very simple. Kitchen at 80°, flour at 70°; well, the water and milk should be 120°. (Dissolve your yeast-cake in water at 100°, and pour that into your flour by itself.) Here's the rule: Multiply the temperature you want to set your dough at (90°) by 3, and that gives 270°; add the temperature of kitchen and flour together, and you get 150°, just 120° less than 270°. So you scald your milk and tone it down to 120° with cold water or by cooling. Add it to the flour, and knead away. When you put the thermometer into the dough as it is ready for setting it will read so close to 90° as to be perfectly satisfactory.

OPPORTUNITY faces every working farm laddie, for work is what brings success.

A Valentine Flirt

By J. B. Rogerson

O Maiden fair,
I do declare
You are the very limit!
You pierce my heart
With Cupid's dart—
Then say there's nothing in it.

It is a shame
To let love's flame
Be quenched from want of fuel.
And if you do
You'll surely rue
The day you were so cruel.

But if you don't
Love me, and won't
Accept my love divine,
I'll be your brother,
And ask another
To be my valentine.

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In Honor of Saint Valentine

By Virginia Richmond

ORIGINAL favors or cases for containing the valentines may be made by weaving pink and silver paper according to the diagrams pictured. The paper may be purchased at any stationery shop. When completed each heart case may contain a joking valentine prophecy appropriate to the person for whom it is intended, or an original verse may be enclosed, making a valentine prophecy. If not gifted in writing jingles, lines may be copied from old-fashioned bought valentines, or suitable quotations may be found in books of poetry. These should be written neatly on heart-shaped pieces of paper which will just fit inside the woven case.

The latter requires only patience to make, and close study of the diagrams given. Take two strips of paper, one pink and one silver, each strip seven inches long by two and one-quarter wide. Double each strip together across the middle, and round off the two ends as shown in No. 1. A representing the folding. Now cut in at right angles to the folded edge for about two and one-half inches, dividing it into equal strips, making at least six, although nine are prettier, because they make finer basketwork; but the more strips there are the longer it takes to weave them. You now have two pieces of paper like No. 2, which represents the paper still folded, as it must be for weaving. If it were opened out it would look like No. 3, the dotted line showing the fold. Now begin weaving by putting the first double strip of silver paper between the two sides of the first double strip of pink paper; then open the first silver strip and put the second pink strip between its two sides; then close the first silver strip and put it between the two sides of the third pink strip, and so on, alternately, until the first silver strip is woven all the way across the pink

paper. Then begin the second silver strip, weaving in the same way, only putting it outside the first strip of pink instead of inside, so that the weaving will make alternate squares of pink and silver, and so on with all the strips until the case is finished. A hole may be punched at the top where the indentation of the heart shape occurs, and the two sides tied together with a pink ribbon.

If there is a party there should be a card at each place of course, with the name of the guest who is to sit there written upon it. A plain white card will do, but it should have a little heart of pink paper or a heart "sticker" in the upper left-hand corner. Stickers, or pasters, as they are sometimes called, may be purchased of any stationer's where crêpe papers are kept. They come in boxes or small packages for a few cents. Or they may be home-made. If the latter, a heart of the right size can be drawn on the wrong side of the pink paper and cut out with scissors without folding the paper, pasting it on the card.

In the middle of the table there should be a cake containing a ring and a thimble. A bone embroidery ring should be used, and a pink celluloid thimble, as metal might give an unpleasant flavor to the cake. Each guest is to cut a wedge, and the girl who gets the ring will be the first of the party to receive an offer of marriage; she to whose lot the thimble falls will be the spinster. The cake should be covered with white frosting and decorated with pink candy hearts around the edge, with two interlacing rings of citrou in the middle. One ring may be cut open to let the other pass through, and the joining be placed where it will not show.

Heart-shaped motto candies of the old-fashioned variety will add merriment to the occasion. Little individual cakes baked in heart-shaped tins and covered with pink frosting are also attractive. Through each heart should be thrust an arrow made of a small wooden skewer. The latter should be gilded, and the blunt end split in a little way by two cuts at right angles as in No. 6. Then a circle of silver paper should be folded as in No. 7. The black lines represent outward folds, the dotted lines inward folds. The edge should be cut in eight semicircles as indicated in No. 8. After this is done the paper should be doubled and brought together so that all the inward folds touch and the four outward folds form a point which is pushed into the split end of the skewer to form the feather of the arrow, No. 9.

It makes a great deal of fun if portraits of the future sweet-hearts of the guests are passed around at dessert. They are taken from newspaper pictures, advertising cuts, etc., just the head or figure being cut out and mounted on a card which is enclosed in an envelope sealed with a pink paper heart. The

envelopes are mixed together in a basket or salver, and each guest chooses one at random, thus creating no end of merriment at her own expense.

Original home-made valentines are always a joy to evolve. A dozen or so paper lace hearts, a package of heart "stickers," or pasters, as they are called, a collection of miniature toys and a paste-pot are all that one requires. Original jingles or old-fashioned valentine verses may be inscribed on these home-made offerings.

Little bonbon boxes for holding the home-made candy offering in the shape of valentines are very simple to make. Old powder boxes may be covered with crêpe paper and decorated with heart pasters, cupids, etc. The cupids, by the way, come in dozen lots,

also for a few cents. Any ingenious girl may give a delightful valentine affair at a trifling expenditure if she will invest in a few of the hearts, pasters, and a roll or so of crêpe paper.

Joining Hearts: a Game for a Valentine Party

HANG from the chandelier or the middle of the ceiling an inverted parasol, and to this attach lengths of various colored ribbons, one fewer in number than there are girl guests. Fasten to the loose end of each ribbon a heart or arrow-shaped card bearing one line of an appropriate valentine motto, original or borrowed. Let someone play a march or dance tune on the piano, and while they do this, command the girls, whom you have seated in a row along the wall, to march, dance, or skip forward gracefully to the rhythm of the music and each to take hold of one end of ribbon before the piano stops. The moment that it stops, which should be in the middle of a strain, the rush must cease and the girl who has failed to get an end is compelled to complete with one riming line, original or remembered, the half motto which is written on the cards of the two guests nearest her. Each of these two guests calls out one of the boys in the room to be her time-setter. They come

toward the circle, and after one girl has read the half verse on her card her time-setter counts thirty, slowly, and within this time the victim must supply the rimed line. If she does it the boy gives her a trifling prize, a button or a bow, which he will find on a table near-by, and where dancing is approved of he may claim a short dance. If she fails she is obliged to do some absurd thing commanded by the boy, such as to pick up a handkerchief, bludfolded, after being turned around three times. The three players who have had a part so far should be dropped out and their ribbons detached or knotted up, and the game continued until each motto has found its couplet and each girl has had a turn.

Suggested Half Verses for the Game

1. "A book of verses underneath a bough."
2. "Drink to me only with thine eyes."
3. Thy hand is than the snow more white.
4. No sweet I find that can compare.
5. The violet pales before thine eyes.
6. The rose blooms not one half so fair.
7. Thine ear is like the pinkest shell.
8. Thy heart is deep and kind and true.
9. Safe held within fond memory's shrine.
10. Thy voice, more silvery than the brook.
11. "Not too kind nor good."
12. Thy words fall like the morning dew.

It always adds greatly to the effectiveness of a party given in honor of a special festival when the room is trimmed appropriately. A pretty way of doing this for Saint Valentine's Day is to fasten strings or wires here and there, fastening to them lovers' knots

of colored cheesecloth or other material, cardboard hearts covered with tinfoil, bunches of flowers—easily made by cutting up pieces of soft paper the shape of petals, then shirring them up the middle on a knitting needle or similar implement and binding a mass of separate petals together at the base.

A Valentine Bird Party

NOW when fields are white with snow, try giving a valentine bird party. From the woods bring in spruce boughs and trailing hemlock for wreathing around pictures and windows. From obliging neighbors borrow two or three canaries in their bright cages and hang these in the room where the guests are to be entertained, being careful to see that Puss is securely locked out.

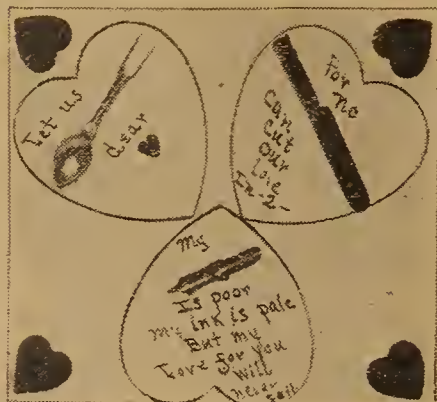
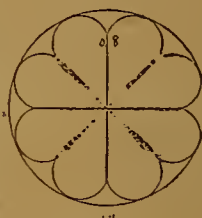
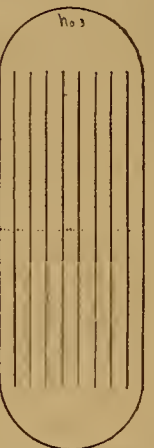
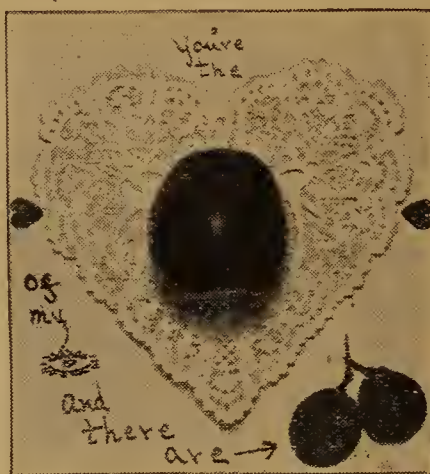
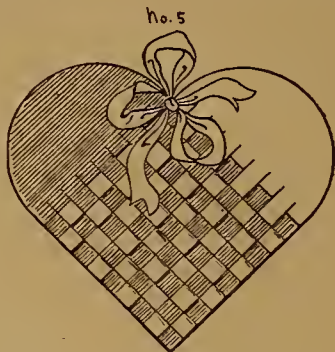
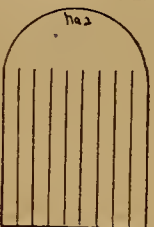
A charming guessing contest is arranged as follows. Provide each guest with a pencil and paper upon which to write answers to the following questions: What bird is—?

1. A jolly outdoor time; 2. What hunters sometimes do; 3. A quaint old-fashioned name; 4. Used in decorating public buildings; 5. A celebrated artist; 6. A colored tool; 7. What a dog does when happy; 8. What farmers need after harvest time; 9. From which you may buy meat; 10. A color Quakers like; 11. An unsteady light; 12. Material for dresses; 13. What children like to do; 14. Never seen in summer; 15. What friends do; 16. A boy's name; 17. A stupid fellow.

The following are the correct answers, and a prize may be given for the best list submitted at the close of the contest:

1. A Meadow lark; 2. Kildeer; 3. Phoebe; 4. Bunting; 5. Whistler; 6. Yellow hammer; 7. Wagtail; 8. Thrasher; 9. Butcher bird; 10. Dove; 11. Flicker; 12. Duck; 13. Teeter; 14. Snowbird; 15. Chat; 16. Bob White; 17. Booby.

In the dining-room use green boughs and sprays for decorations, and flowers if possible. Have the place cards bird-shaped, or, if these are difficult to obtain, use post cards, each showing a different bird or group of birds. Have the doughnuts bird-shaped, the cakes shaped with a bird-shaped cutter. Instead of after-dinner mints, pass bird-shaped chocolates such as are sold for Easter, and if prizes are offered let them be in form of a china bird, or a chicken for a booby prize.—L. M. THORNTON.





“How Doth the Little Busy Bee?”

By Emily L. Tucker



IF YOU have some leisure and want to earn a little pin-money, why not try beekeeping? Beekeeping means not only pleasure and profit but a more healthful condition of body and mind. It is well adapted to women and fits in with other work. It is not necessary to devote any regular time to it, as you can generally plan for it according to the work you have on hand,

and the season is practically confined to six months of the year. As to location, it is possible to keep bees in the city, even on the roofs of buildings, but of course it is much better to be in the suburbs, and better still in the country.

My sister and I have kept bees for the past eight years. We started with only two colonies. At the end of our first season we had increased our colonies to four and had taken off twenty-five boxes of honey, besides several more boxes partly finished. We gradually increased to nineteen colonies, but found that was

too many to care for with our other work, so we have only thirteen at present. Our crop of honey varies according to conditions. Some seasons we have had over four hundred and fifty boxes of honey, besides many unfinished boxes that we keep for our own use. What we sell retails for twenty-five cents per box, but we make a special price to dealers. The net amount received for honey adds quite a little to our income.

The expense of starting beekeeping will depend chiefly on the number of colonies you have, but there are certain things that are necessary, whether you have one colony or half a dozen. After the first cost the expense from year to year will be small.

The price of bees and equipment will probably vary somewhat according to the locality. For our two full colonies of Italian bees with hives, purchased in Boston, we paid nineteen dollars and a half. Besides these we bought supers, section boxes, wax foundation, cartons, smoker, hive tool, and Porter bee escape, the price of which will be found in any catalogue of supplies. Instead of buying full hives as we did, you can save expense by getting three or more frames of bees in each hive, and they will soon build up into good colonies. You can make your own bee veil of black mosquito netting (you cannot see clearly through white), and for gloves a pair of heavy kid, discarded by your husband or brother, with gauntlets (sewed to wrist of gloves) of ticking, denim, or other thick goods, will answer very well and complete your outfit. There are several advantages in ordering ten-frame hives, rather than those with eight frames, and the extra expense is very slight.

It would be advisable to start with at least two hives, as this will give you more chance to increase your colonies and you will not be so much crippled by any losses that may occur. You may succeed, however, with simply one colony, especially if you are near some other beekeeper, as he could probably help you in case of need. From the one or two colonies that you start with you can gradually increase the number (without buying more bees) until you have as many hives as you want to take care of.

So many things enter into the question of profit that no safe prediction can be made. Weather conditions, the way the bees work in the hives, whether or not they swarm, the time you give to them,

the extent to which you increase—all these have to be considered. If the bees are working to build up new colonies you cannot expect much surplus honey the first season. But each year, as you learn how to manage the bees and increase the number of your colonies, you will be likely to have a larger crop of honey and consequently more profit. After the first season a net profit of from five to fifteen dollars per hive would be a conservative estimate, and under favorable conditions it would be possible to make double, or even much more than this.

If you have never seen the inside of a hive it will be well worth your while to visit some beekeeper, even going to some trouble and expense to do so, if there is none in your immediate vicinity. Ask all the questions you can think of and get him to explain some of the simpler things about the queen, the worker bees, and the drones. You can also get much practical information from the local dealer in beekeepers' supplies, including the address of the nearest beekeeper if you do not know of one already.

An indispensable help is “The A B C and X Y Z of Bee Culture,” by A. I. and E. R. Root, price \$1.50, which may be obtained from The A. I. Root Company, Medina, Ohio, who are international headquarters for everything pertaining to beekeeping. Send for their catalogue of supplies and for free booklets issued by them. They can also put you in communication, if you wish, with the nearest local dealer in beekeepers' supplies.

Book Reviews

Concrete Roads and Pavements, by the editor of “The Cement Era,” E. S. Hanson. This book deals with exactly what the title calls for. It compares concrete roads with other types of roads and pavements, and gives cost of construction and maintenance. A book that will be of interest to most farmers. Published by The Cement Era Publishing Company, Chicago. Price, \$1.

The Honey Bee is the name of a remarkable bulletin by W. D. Wright and issued by the New York Department of Agriculture at Albany. It is a pamphlet of nearly two hundred pages and is the latest thing on all matters pertaining to beekeeping. All beekeepers who can get it should have it—and we assume it will be sent free to citizens of New York.

A Club for Home Arts

How Some Energetic Women Ingeniously Turned Their Talents Into Philanthropy and Pin-Money—By Dora Folsom Brokaw

YOUNG Mrs. Spencer was gazing moodily out of the window when her neighbor, Mrs. Bigelow, came in.

“Well, well!” called Mrs. Bigelow. “What's the matter?”

“Oh, nothing,” said Margery Spencer, “only I was wishing that money grew on that bare hydrangea bush out there.”

“I was just wanting a little money myself,” responded the older woman.

“Of course, Ted has done really well with our little farm this past year,” continued Margery, “and I always find opportunities to help along; yet now and then I have a little time to spare, and if I could turn it into money I'd be glad.”

“Well,” said Mrs. Bigelow, “I have not much time to call my own, but the children are growing up, so I am not quite so busy as I used to be. I should be glad if the girls and I could make a little pin-money. I don't want them to leave home, as they are far better off on the farm. But they aren't satisfied. They want more independence and outside interests.”

“I understand all about it, Mrs. Bigelow,” declared Margery. “You know I grew up in town, and, though I have learned to enjoy the country, I do think the women of our neighborhood want something social, as well as a little more pocket-money now and then. How do you think it would do for us to form a Club for Home Arts?”

“Me, in an art club?” Mrs. Bigelow held up her hard-worked hands in wonder. “Why, I can only make pies, jelly and rag carpet.”

“Just it, exactly!” Margery clapped her enthusiasm. “I said a Club for Home Arts. You can do those things well; your girls paint a little and embroider, and there are others who have been trying arts and crafts. Let each one do the thing she can do best. Suppose we invite those we think would be interested to come here to-morrow afternoon to talk it over and organize. We can call them up on my phone now.”

Mrs. Bigelow, as her husband jokingly expressed it, “took after her daughters in smartness,” so she readily fell in with the plan. The outcome was a Club for Home Arts, to meet once a week at the

house of a member. Each one agreed to bring with her some piece of handicraft which she might also work on in spare moments at home, and which was to be laid away for a spring sale.

At the third meeting the club numbered twenty-five members, and it increased during the following weeks. Refreshments were served at the meetings, but were restricted to sandwiches and two kinds of cake, with tea, coffee or cocoa. A committee was elected to receive and inspect articles turned in for the sale. In order to rent a place to hold the bazaar, a small monthly fee was charged each member, and a treasurer elected.

Busy hands produced numbers of pretty and useful articles in the following months. Old Grandma Knowles knit rugs, Mrs. Bigelow made rag carpet, others crocheted, braided or pulled rugs, and they were all pretty and durable. Hundreds of glasses of jelly and fruit were put up and neatly labeled. Norma Bigelow's hand-painted calendars, place-cards and such novelties, and Gladys' daintily embroidered children's frocks, bonnets, coats and bibs made a fine display. One young woman painted china, another made decorated leather articles, a third worked in brass, for these people subscribed to current magazines for women and kept up with the times. Also, all kinds of knitted and crocheted goods were handed in to the committee for inspection, while the days fairly flew.

On the morning of the first of May as many members as possible met the committee in town to make ready for the sale. Many had relatives or friends living in the town, and had spared no effort to advertise among them their undertaking. A new store in the main street was still vacant, and the owner gladly rented them the front room for two days. There a goodly array of things tempted the buyer. Besides fancy-work, there were freshly baked loaves of bread, white and brown; biscuits and cakes, such as only farmers' wives and daughters can make; pats of golden butter; rolls of cottage cheese; jars of honey; bottles of grape-juice; baked beans, and a large quantity of home-made candy.

Owners of bungalows swooped upon the rugs at first sight, and when all were sold orders were placed for more. Housekeepers and mothers fell on the jellies and preserved and canned fruits; babies' clothing disappeared as though the stork hovered overhead.

The members of the club were hilarious when the treasurer read her report

at their next meeting. The profits were divided equally among the members.

“For,” said good Mrs. Bigelow, “one has worked as well as another.”

A new plan developed at that next meeting. Through the co-operation of the Woman's Club, a permanent Woman's Exchange was established in town, and supplied by the members of this club.



Busy hands produced pretty articles



OUR YOUNG FOLKS' PAGE

Conducted by Cousin Sally



Abe's Speech—By L. Josephine Bridgart



ABRAHAM'S grandfather had been an intense admirer of Lincoln, and he had insisted that the round-faced, everyday sort of baby be named Abraham Lincoln Trent. When Abraham Trent came to the high-school age the boys called him "Old Abe," and as the name was spoken affectionately rather than teasingly Abraham liked it and came to feel a sort of proprietorship in the great man and to wonder if he could be like him.

One February 12th an old lawyer made a speech to the schoolboys and told them a new anecdote about Lincoln. It seemed that he and Lincoln had been engaged on opposite sides of a case to be tried in a small town in Illinois. Lincoln and the other lawyer arrived on the same train and went to the one hotel to rest a little and have dinner. There was to be a preliminary hearing at eight o'clock in the evening.

While waiting for dinner the men in the hotel gath-ered about the box stove in the parlor and Lincoln began to tell stories. "I never heard anything like it!" declared the old lawyer, his face kindling. "His eyes held each of us. They seemed to be everywhere at once. He told story after story. Not one of us went in to dinner, and when a newcomer broke the spell we found it was nine o'clock. We had missed the preliminary hearing. But it had been worth while."



ABE listened wide-eyed, and he resolved then and there to be a great orator. That very afternoon he sought out the elocution teacher and told him his ambition.

The teacher laid a caressing hand on the boy's shoulder.

"Why, lad," he said, "you have the voice—a splendid voice! It carries wonderfully. But an orator must have something to say."

The next Saturday as Abe was cleaning his gun preparatory to joining three other boys who meant to spend the afternoon hunting, Mr. Trent hurried into the house.

"Oh, Abe," he exclaimed in a relieved tone as he saw the boy. "I was afraid you'd be gone! I want you to go to New York for me. You've just time to catch the 12:30. Get your lunch in the station."

"Here," he said, handing the boy a letter, "give this to the man it's addressed to and get an answer. If he isn't in, wait until he comes, but try to catch the 5:20 back. No, he hasn't time to change his clothes," he answered in response to Mrs. Trent's exclamation; "he's clean and whole, and he'll have to do."

There was a peculiar joy in going alone on a real business trip. It's a mighty nice thing to have a mother, but Abe often wished that Mrs. Trent would treat him more as his father did. He knew if there had been time she would have invented an excuse to go to New York, just to look after him.

As the train passed one station, Abe noticed a young man standing on the freight platform, haranguing a crowd of interested men who stood just below him. What he was saying Abe had no idea, but the fixed gaze of the audience aroused anew the ambition to be an orator. How must it feel to have a crowd hanging breathless on the words you utter?

It was all interesting and Abe was surprised when "Jersey City! All out!" sounded through the car.



NOTHING happened to delay him. He enjoyed ordering his own lunch and leisurely disposed of it. Mr. Trent's man was in and read the letter with respectful interest. He dictated a reply which his stenographer took down and transcribed with wonderful rapidity, and then Abe was courteously escorted to the elevator and found himself with just enough time to make the ferryboat that connected with the 5:20 train.

He stood in the rear cabin a moment, watching the gatemen and the passengers on the rear deck. It was occupied by foreigners who seemed to have been bidding farewell to some friends who were returning to Europe.

But the boat was hardly out of the slip before a woman leaning over the rail gave a cry of terror. Instantly the happy crowd on the rear deck became a huddled mass paralyzed with fright.

Abe sprang through the door to see what the trouble was. He thought one of the horses might have broken loose and be trampling one of the children. The screams of the women were dreadful. And then he saw.

What seemed to be an ocean steamer was bearing steadily down upon the helpless ferryboat.

Abe braced himself against the side of the boat. He could swim, but the thought of jumping overboard did not occur to him. He had a confused sense that there was something one ought to do in time of an accident, but he could not think what it was. His eyes were fascinated by the great bulk about to crash into them. He said to himself dully that it was a good thing they were clear of the dock; there would be some chance to rebound.

Then instantly his senses cleared. "Come inside! Come inside, all of you!" someone was saying at his elbow. "It will strike the back deck. The fools!" Abe's strong, vibrant voice rang over the din.

"Silence!" It was the word the elocution teacher always used to gain order.

"Come this way!" Abe heard himself saying. "Steady there! Quiet now! That's right! Here, you wop, don't push! Quiet now! You're all right!"

With a speed that seemed incredible the little crowd pushed past Abe into the cabin. As the woman with the baby hurried by she cast a glance at the strong figure in the knickerbockers and thrust the child into his arms. Then she stopped.

"Inside!" he said imperatively. And she went in. Immediately Abe felt himself pulled after her. Then someone shut the door, and the next instant the crash came.



IT WAS all over in a minute. Abe was knocked off his feet, but he held the baby against his breast as he went backwards, and it did not even cry. The crowd was badly shaken up, but no one, the man with the weak voice reported, was injured.

"It was the Fall River boat," he explained. "Our boat failed to whistle before she came out of the slip. The Fall River boat wasn't going very fast or it would have been all day with us. Weren't those Italians fools? They seemed to think the nearer shore they got the safer they'd be. I knew she'd strike the back upper deck. Look at it!"

Abe was still holding the baby. He felt dazed and his lips had a curious tendency to tremble when he tried to speak. He leaned against the door when he saw the deck. A great part of the deck above had been knocked down upon it, and where the little mother and baby had stood was a piece of timber that would have cruelly crushed the hardest skull.



Abe, before he was an orator

The other man's voice was trembling with excitement. "I couldn't make them hear!" he exclaimed. "What a gift a good voice is! In an accident a crowd will do anything a calm person tells them."

Abe was about to reply when he felt a soft pull at his coat sleeve, and looking down he saw the little Italian woman. She was trying to kiss his hand and take the baby at the same time.

Abe relinquished the baby reluctantly. It seemed as though it belonged to him. "It's all right," he said gravely to the mother as he handed it over.



AND then to his embarrassment the whole crowd hemmed him in, talking and gesticulating, pointing at the strewn deck and weeping and laughing, trying to kiss his hands and even his face, the man he had called a "wop" among them.

"It's all right," Abe said, picking out this man and addressing him earnestly: "I'm glad you're not nor any of you are hurt. But that gentleman over there is the one you ought to thank. He told me what to say. I was just as stiff as the rest of you until I heard him trying to tell us what to do."

"Thank you!" the man who had pushed persisted. He pointed to the woman with the baby. "My baby! My wife! Thank you!"

"Oh," said Abe, his face lighting up, "you were trying to get to them! I don't blame you! Tell them to hug this other fellow, won't you?" he added nervously.

The older man with the weak voice laughed and then jumped up on a seat. Instantly the crowd was silent. The people from the other parts of the boat stood at a

little distance, not fully understanding but interested in what was going on.

"Tell them I only said what I heard you saying," whispered Abe. "They seem to be going to take up a collection. Tell them we don't want their money; we're only glad they're all right."

The other man nodded. He was carefully dressed and his face showed the keen man of business. He was smiling now. "Friends," he said quietly, "this young man says to tell you that he is very happy you are all safe and he doesn't want anything except your good wishes. Let's give him three cheers anyway!"

The cheers were lusty if irregular and not wholly American in sound.

Then Abe spoke. "I don't know this man's name," he said, and his voice reached the far end of the long cabin, "but he's the one that saved us all. Three cheers for the other fellow!" And led by Abe's strong, American, high-school shouts and swelled by the other passengers, who began to understand what had happened, the cheers were all that could be desired.

Then the deck hands came and hurried the passengers off the disabled boat, which had turned and worked itself back into the slip.

"I'm Carson of Carson and Brown," the "other fellow" explained as the two parted, "and I'll be glad to see you any time you're down-town."

Abe explained who he was and who his father was, and the boy and man shook hands understandingly and parted.



ABE had lost his train, but he knew there was another in an hour or so, and he hoped his mother would not be worried. His nerves were still tingling as he left the second boat. He paid no attention to the crowd watching the disembarking passengers until a brown-haired woman in a charming violet costume laid her hand on his arm.

"Why, Mother!"

"I'd been wanting to do a little shopping," Mrs. Trent explained apologetically, "and I thought I'd just drop everything and come in to-day and go back with you. I caught the 3:13."

She had suspiciously few bundles and Abe could not help wondering just when she expected to shop if she came in on the 3:13 train and planned to leave on the 5:20, but he made no comment.

"Are you tired, Abe?" she asked anxiously. "You look white."

And then, as they paced back and forth, he told her about it—a bit tremulously. Mrs. Trent interrupted him only to utter little cries of fear and distress and joy.

"There is the mother and her baby now!" Abe whispered, indicating the Italian mother with her child.

When she saw Abe her face lighted up. She hurried forward. "You—" she said, "baby!" and thrust a small silver cross into the boy's hand.

"She means she wants to give it to you from the baby," Mrs. Trent whispered. She smiled at the other mother with her heart in her eyes. "Thank her, Abe!"

Abe murmured a shy "Thank you!" and the mother went away, apparently well satisfied, holding her baby close in her short arms.

The boy put the cross carefully away in his pocket-book. "I'm going to keep it always," he said softly.

"Mother," he resumed after a little silence, "when I had that baby in my arms and he seemed so small and helpless and I felt so big and strong, I just seemed to know how mothers feel." He laughed awkwardly. "I suppose we always seem like little bits of fellows to our mothers, no matter how big we get!"

Mrs. Trent squeezed the muscular arm next her. "Abe," she said tremulously, "mothers can never be anything but mothers, I'm afraid, and I'll never get used to having you away from me. But when you told me about the accident I realized the time had come—and I was glad of it too, though I'd always dreaded it so—" Her voice broke.

"What time, Mother?"

Mrs. Trent's eyes shone proudly through her tears. "The time when my boy became a man!" she answered.

Harnessing a Heifer

By John E. Taylor

HOW many boys nine years of age are able to ride behind an animal which they have trained themselves? There is one at least who can, Harry M. Corey of Somerset County, Maine.

Harry is a young farmer. He has always loved animals and has had patience in working with them. A year and a half ago, when he was only seven years old, there was a little heifer born on his grandfather's farm. He decided that he would like to own this, and train it as he had seen his grandfather train colts. The next day after it was born he gave it the first lesson.

It was not an altogether easy task that he had undertaken, but he kept at it faithfully, and the reward he feels is well worth the effort. He has a team which is the envy of every boy and girl who sees it. It is not a plaything as is a dog after it has been trained to haul a cart, but this heifer carries her master to school either in a wagon or saddleback. In vacation time he takes the children for rides. During the berry season Mrs. Corey and Harry may be seen returning from the fields behind the heifer with loaded baskets. If in future years this young man is as faithful in his tasks as he was in this one, he will be the successful farmer that he hopes to be.

Let the Air In—By Mary Hamilton Talbott

"KINDER close, ain't it?" commented my hostess as she saw me open a crack in the window of her air-tight sitting-room, for it was a home in the country where they had not learned that ventilation for health's sake should be catalogued among the modern improvements. But she soon shut out the good fresh air and remarked, "We're trying to save on coal, so I keep things pretty well closed up." She did not realize that her efforts at economy were like the man who put in at the bung and let out at the spigot, for a house flushed with fresh, bracing air is heated much more quickly and at a lower fuel cost than one filled with heavily laden carbonic atmosphere.

He was "Sewed Up for the Winter"

Notwithstanding the nation-wide strides in hygienic knowledge, the day has not passed when many houses are treated like the little New York urchin whose teacher sent him home with the request that he have a bath. His teacher was paralyzed on his return by a note from his mother saying it was impossible, for he had been "sewed up for the winter." Windows of bedrooms and living-rooms are nailed down early in November, and to exclude still further the "death-dealing blasts" of fresh air, listing is tacked along the window casings and bagging laid against the crack at the bottom of the outer doors, and all winter long the family live and move and do their breathing in the foul atmosphere thus secured for household use. In which case a man's foes are literally they of his own household, for added to the exhalations from human bodies and the smell of dead-and-gone meals, there are preserved also the crop of germs from previous colds and sore throats, carefully protected and kept from any danger of escape! Look around at your neighbor who thus shuts himself up, nine times out of ten you will find this family irritable; they fuss over trifles; they have headaches, colds spread among them with wonderful rapidity, children are fretful, the meals go wrong, and everything seems to be at sixes and sevens.

Ventilation in winter is absolutely necessary if the family is to remain well, no matter how low the temperature. Once get clearly in mind that an un-

ventilated room is as full of disease germs as the henhouse is of undesirable occupants if not kept clean, and you will appreciate the importance of open windows. The windows and doors should be opened for at least ten minutes the first thing every morning, and after each meal there should be a thorough airing of the lower floor, for no matter how perfect any system of ventilation may be it is impossible to prevent cooking odors, and they should be allowed thus to escape. This airing is doubly necessary if there are smokers in the family. Each bedroom should have the windows flung wide open until after breakfast. In the family sitting-room there should be some arrangement by which there is a constant change of air. I have found a good plan, which does away with drafts, is to insert a narrow board between the bottom of the lower sash and the sill. The board should be made to fit perfectly so there will be no stream of cold air from the sides or top or bottom edges. It keeps the two sashes just far enough apart to permit a free current of air without chilling the room or its inmates.

The Woolen Clothes Need the Air

An acquaintance of mine looks upon a friend who "leaves her closet doors open" as a most slovenly housekeeper. Maybe it does not look altogether tidy to see these doors open, but ten chances to one the woman whose doors are open has a better smelling home than the one who shuts hers tight all the time. Woolen clothing in particular has a remarkable power of absorbing and retaining the emanations from the body, and to hang it in stuffy, airless closets is simply to ripen and perfect the bouquet of odors. And, too, the unaired closet is the favorite haunt of moths. At least once a month every closet should have its contents removed into the air and sunlight. If you have been of the unairing kind, and these pests have invaded your closet, set upon the floor a tiny alcohol lamp and hang over it a small saucepan containing half a cupful of formaldehyde. As soon as it begins to boil shut the door, let the liquid simmer itself away, and do not open the door for five or six hours. When you do open it stand back quickly to avoid the stifling gases. When the smell has disappeared the clothes

may be put back. But this treatment is rarely found necessary if the closet is properly taken care of.

In the ancestral home of an aunt of mine, who was spending her last days in the house in which she had been born early in the last century, there was a spacious cubby-hole which a few years ago I asked if I might explore. When we ascended the garret stairs the old lady said she "guessed nobody had so much as peeked into that cubby for fifteen years," and I guessed it was more years than that since "things" began to be stuffed into it from the odor which greeted us from old hoop-skirts, old papers and books, boots and shoes of a bygone style, besides a trunk or two. As moths would not attack this kind of things, my hostess said she had not bothered with the poke-hole in her yearly campaigns against the other dirt of the house. While it is quite true that moths will not attack them, I know enough of the tricks and manners of germs—though I make no pretense of being a scientist—to be sure of their continued and prolific existence in the dust which gathers and deepens with each month in all kinds of nooks, and their lurking in wait for conditions favorable to development of disease. My inclination was to shut quickly the door lest they should be wafted down the stairs to the other part of the house, to new breeding grounds in the rooms below, but courtesy forbade anything but a hurried opening of the garret windows, stiff from disuse.

Yes, Even in the Winter!

Many people will air out the cellar in summer every day in order to keep it sweet for the perishable foods which must be kept in it, but in the cold weather when the pantry or out-kitchen is used for this purpose they rarely think of opening the cellar windows, with the result that it soon becomes dank and noisome, the abode of molds and spiders, to say nothing of the odors from decaying fruits and vegetables, whose combined vapors penetrate the whole house and add their quota of injuriousness to the health of the family living above them. Every cellar, even if kept free from dirt, should be ventilated as carefully in winter as in summer, not only from the viewpoint of health but that of economy, for that musty smell

of the unventilated cellar is proof positive that mold plants are there and ready to attack any fruit and vegetables stored on its shelves or in its bins. No weather is cold enough to kill these undesirable germs.

The Moisture in the Air

Normal, free, outdoor air contains a certain percentage of moisture, and that moisture is essential to our physical well-being. How much atmospheric moisture do you think there was in the air-tight sitting-room of my hostess who kept the windows down in order to save coal? The air had been heated and reheated in that room until the moisture was practically all out of it. And air in this dried-out state sucks up moisture like a sponge, and unfortunately for ignorant humanity the air cannot be prevented from absorbing moisture. When the relative humidity in our homes falls too low, therefore, the air begins to draw moisture out of everything in the room—out of books, door panels, furniture, but most of all it takes it out of human beings, and the parts most seriously affected are the nasal passages of the lungs. Obviously it is essential for every housemother to know how to gauge and regulate the atmospheric moisture of the home. A physician told me that "the simplest gauge is steam on the windows. No house is fit to live in during the winter unless there is steam on the window panes, if there is not you may be sure that every breath of such air that you and your children draw is harmful." The missing moisture may be supplied in various ways, but a good plan is to have pans of water where the heated air of the stove or furnace passes over them. A very good humidifier can be made by hanging strips of wick-like cloth over the stove, with the ends in water. These cloths draw up the water and the air absorbs the moisture. But best of all is to keep a constant current of fresh air coming into the room.

And last but not least in the problem of winter ventilation is personal ventilation, for nothing will foul the air quicker than the odors and emanations which are given off from the body, the hair, the teeth, and the clothing which are not carefully attended to. Sickness is the price one invariably pays for inattention to ventilation.

Mother of Heroes—By Julia A. Robinson

THE clock on the shelf struck four. Mrs. Rowe took off her glasses and laid them on the old Bible she had been reading, for her eyes were tired. She rose, walked over to the window, pushed back the faded curtain, and looked out. Here and there a farmhouse dotted the plain and the sudden lights from lamps being lighted flared up in their windows. Not far away rose the spire of the little church. The darkening road stretched away in the distance with but one team in sight. A tear stole into her eye, but there was a smile on her thin lips.

"I've got God's great world anyhow," she said, speaking aloud, as she had grown accustomed to doing, being much alone, "and I don't believe He'll forget me—I'll just hold on."

The poorhouse was Mrs. Rowe's great dread, so she boarded her little store, and she would not tell when there was no food in the closet, or when there was no fuel in the old shed. She could not work, for age had laid its handicaps upon her long before the years she had lived justified them. Often she lay awake nights thinking of the future, but always closed her eyes at last, murmuring, "I needn't worry—He'll never forget me—I'll just hold on a little longer."

Mrs. Rowe lived in her one small room which had a tiny bedroom and a small shed attached. Here she had been alone for more than a year, since her last boy had left to fight for emancipation and union. She loved the place; it was home to her, but one by one the pieces of furniture that had been hers in the days her husband lived had been sold, till there was nothing left to sell, and now the money was nearly gone.

Sudden and loud came a knock at the door. Before she could answer, a man lifted the latch and almost fell over the threshold. His eyes were wild with fear and his lips drooped weakly.

"Hide me!" he gasped. "A thousand dollars if you save me from my pursuers!"

A thousand dollars!—it was the only

thing Mrs. Rowe heard as she gazed bewildered at the panting figure. Could it be possible that anyone was offering her a thousand dollars! Why, it would keep her the rest of her life! She need not go to the poorhouse after all.

"Hide me—quick—I'll give you the money—a thousand dollars!"

"Yes, I can do that," she assented. "I can hide you—"

She looked at him. He was not a tall man, nor large. Why, he seemed scarcely more than a boy in size! His knees shook as he stood before her wringing his hands.

"There's the old chest," she suggested. "You might get into that if you'd curl up small. You ain't very big. I'll pull the old curtains over it and 'twill look like a seat. Nobody'd know, sure."

"Oh, yes; let me in quick!" he cried, pushing forward.

But Mrs. Rowe did not notice his impatience. She was thinking of the thousand dollars and what it would do for her. She never was quick, and now her hands were indeed slow and trembling as she pulled the old plaid shawl off the chest and lifted the lid.

It had not been lifted before for several months. The chest contained treasures of the past, and she began pulling them out to make room for the new occupant. There were pieces of cloth rolled into little bundles, bits of carpet, a dress of faded silk that had been her wedding gown, a pair of half-worn baby shoes—she held them fondly in her hands and the stranger gasped:

"Be quick, I beg you!" and his hands twitched nervously as he looked at the door and listened.

"Yes," she assented absently.

Next she pulled out an old soldier coat, handling it with tender touch. Slowly it unrolled and stretched itself along the floor, riddled and torn.

The man shrieked and turned white.

"Take it away!" he screamed.

She looked up bewildered, "What is it you say?"

"Let me in, quick, I say!"

Suddenly she asked, "What are you hiding for?"

Suspicion was creeping into her soul.

"Who are you?" she insisted.

"I haven't time to tell you—only hurry," he evaded.

She stood up now in a defiant attitude, the soldier coat trailing by her side. Her clear blue eyes looked at the stranger searchingly.

"Tell me what you have done!" she insisted. "Who's after you?"

"It's all right," he asserted, wincing.

"Oh, hide me, quick, that's all I want."

He tried in vain to push by her.

"I'll never hide you till I know the reason," she asserted.

"Don't give me up! Let me in, can't you?"

"Not till I know why you must hide."

"I couldn't stand it, you see. 'Twas a hard life, and they don't know a fellow's feelings. They'll be after me, I know."

"Who is after you? Tell me."

"The soldiers!" he snapped. "They'll be sure to find it out."

"A deserter! A coward!" she shivered.

"But—I couldn't—don't!" he cried.

"Your country needs men. Men have given their lives. Fathers and mothers have given their all—and you deserted her!"

The man cowered.

"Call it what you will," he retorted.

"I couldn't stand the life. But save me—only save me and you shall never want—you'll surely save me—"

She faced him with blazing eyes.

"Listen!" she commanded in calm, deep tones. "I had four sons—oh, they were good and strong, the best sons woman ever had!—and they all gave their lives for their country—that you deserted. I sent them out to fight, and they died like men on the field of battle. I am a widow and alone, but I am the mother of heroes—I can't shelter a deserter!"

The man cringed and trembled, but started as he heard a sound without, and quavered:

"Do not give me up, I beg! I'll make it two thousand!"

"Never! Look at this!" she cried, holding before him the blue coat riddled with bullet holes. "In this coat my boy died, my eldest, my Paul. I was a widow, but when the call of war came I gave my two eldest boys to fight for their country. They were aflame with patriotism and I bade them go. In the first battle my Paul fell, and then my third son, Harry, begged to take his place, and I sent him out, proud to give my noble sons for their country's need. He fell too, and Andrew, who had been made a lieutenant. They both lie in unknown graves. I had but one left, my youngest, my Joe. I knew he longed to go to the front, but he wouldn't ask; he wouldn't leave me alone. I called him into my room, and with tears I gave him my blessing and sent him at his country's call. I knew from the flash of his eye that he was glad to go. 'I'll be back soon, Mother!' he cried, 'and you'll be proud of me.' He kissed me and started. He lies on Chattanooga field, but he died upholding the flag, and I am proud of him. I shall never shelter one who has dishonored his country."

The man's arms had dropped to his side, his head had sunk forward on his breast. Two soldiers burst into the room and stepped up to him, laying a hand on his shoulder. "We arrest you as a deserter!" shot out the terrible words.

The man raised his head, and there was a new light in his eye.

"Woman!" he said, "you have taught me a lesson. I suffer justly. Better die than live a coward! But take this; use it for the sake of one you have saved from a fate worse than the death he goes to meet."

He thrust a roll of bills into her hand, then turned to the soldiers and said, "I am ready," and walked out between them.



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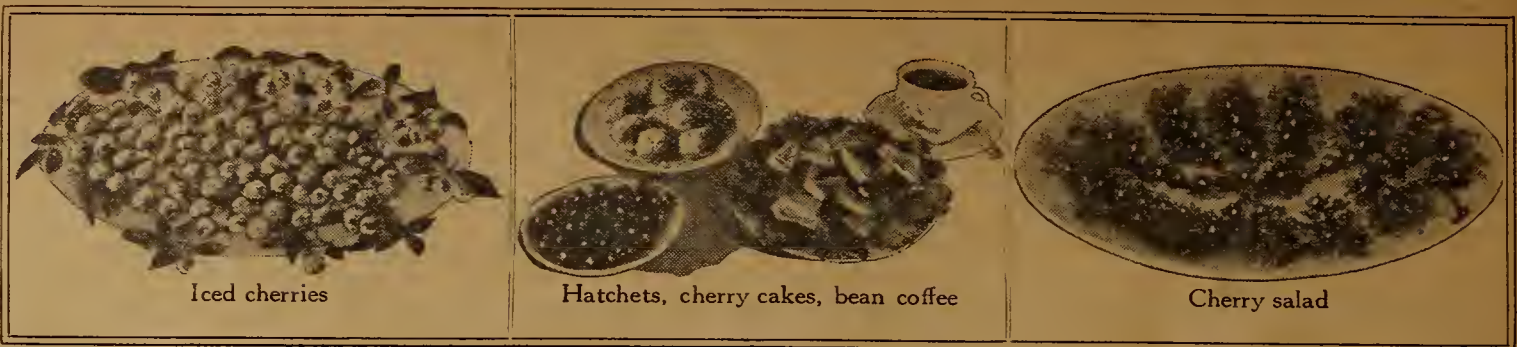
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Iced cherries

Hatchets, cherry cakes, bean coffee

Cherry salad

Emblem Dishes for February Festivals

By Estelle Cavender

CHERRY COOKIES—Four eggs, one cupful of sugar, one cupful of butter, four tablespoonfuls of milk, three teaspoonfuls of baking powder, two teaspoonfuls of vanilla, flour to stiffen. Cream the butter and sugar, add the eggs well beaten, milk, vanilla, and the baking powder sifted in enough flour to stiffen. Knead well, roll out thin, and cut from a cardboard pattern cherry-shaped cookies. Bake to a light brown.

For the frosting boil two cupfuls of sugar with one cupful of water until it ropes from a silver fork, and then take from the fire. In three minutes pour this sirup slowly on the stiff whites of two eggs. Beat until smooth. Have on hand two cupfuls of blanched almonds pounded smooth and moistened with cherry juice. Beat into the frosting. Spread on the cookies and dust with red sugar.

CHERRY SALAD—Select even-sized endive or lettuce leaves. Wash, and lay on a cloth in a cool cellar to get crisp. Open a can of cherries. Thrust a whole hazelnut meat in as many cherries as are needed for each person. Arrange these cherries, in a straight line, on the endive or lettuce leaves and pour on a cream salad dressing.

To make this dressing, put into a saucepan the beaten yolks of two eggs, one tablespoonful of butter, one tablespoonful of sugar, one-third cupful of cherry juice, pepper to taste, one-third teaspoonful of mustard, and one-third cupful of vinegar. Boil slowly, stir steadily, and when it becomes thick as rich cream take off. Serve very cold on the leaves of stuffed cherries.

BEAN HATCHETS; CHERRY CAKES; BEAN COFFEE—Cook navy beans and pork until they are done and dry. Run through a colander. Add salt, a dash of cayenne pepper, lump of butter, sage, and two beaten eggs. Mold into a roll, and bake for fifteen minutes in a moderate oven. When cold cut this roll into

thin slices. From a hatchet pattern of cardboard cut hatchets from the bean slices. Lay on lettuce leaves and serve with bean coffee, cherry cakes, and olive cherries (salted cherries).

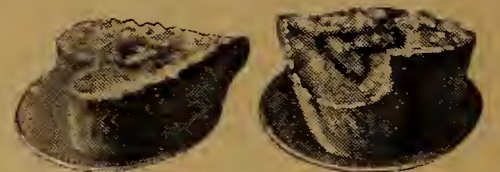
The cherry cakes are made from one cupful of butter, one-half cupful of



Cherry cookies

sugar, two eggs, one teaspoonful of baking powder, one pint of flour, one cupful of candied cherries, one teaspoonful each of lemon and nutmeg extract, and one-half cupful of sweet milk. Drop with a spoon on a greased baking tin and bake in a quick oven.

The bean coffee is made from beans that have been dried, browned in the oven, and ground in a coffee mill. Make as you would strong coffee, only boil it ten minutes or more.



Sweethearts

ICED CHERRIES—Take spiced cherries that have been put up with the stems on, and dry each cherry with a clean cloth. If you do not have spiced cherries open a can of seeded cherries and place a nut meat in each cherry and dry. Dip each cherry in the stiff white of an egg, and then roll in red sugar. Lay on oiled paper until dry. One can make the

red, white, and blue cherries by rolling them in the red, white, and blue sugar.

LOVERS' HEART SALAD—To one can of tomatoes add one teaspoonful of powdered sugar, one teaspoonful of salt, a dash of cayenne pepper, one half of an onion, and a few cloves. Cook twenty minutes and strain. When cold add two cupfuls of hickory nuts that have been rolled, and one box of granulated gelatin which has been soaked in one cup of cold water. Pour into heart molds and chill. Serve on lettuce leaves with a salad dressing.

LOVERS' ALMOND LOAF WITH HEART BEETS—Prepare a nut loaf as follows: Two cupfuls of rolled almond meats, two cupfuls of grated bread crumbs, one cupful of sweet cream, two eggs, one cupful of chopped celery. Mix all together, add salt and pepper, and mold into a heart-shaped loaf. Place in a well-buttered baking pan, and then carefully scoop a hole out of the center. Bake in a moderate oven for about twenty minutes. When ready to serve fill with hearts cut from pickled beets and sprinkle on almond meats. Garnish with parsley.

CUPID HEARTS—Open a can of salmon and drain off all of the liquor. Mash the salmon very fine and add to it two eggs, salt, pepper, and sift in enough flour to roll out. Cut into hearts, stick walnut meats on both sides, and fry in hot fat. Arrange on carrot leaves or celery tops as a garnish, and thrust an arrow made from celery through each heart.

BANANA AND FIG SWEETHEARTS—Line small heart-shaped tins with pie dough, dot all over with a fork, and bake. For the filling take equal parts of chopped figs and mashed bananas. Mix together, add the juice of two lemons, sweeten to taste, and fill in the heart shells. When ready to serve spread whipped cream over the top, and with melted chocolate outline a heart in the middle.



Lovers' heart salad

Lovers' almond loaf

Cupid hearts

By-Products of the Kitchen—By Mary Hamilton Talbott

MOST housewives look upon eggs which have been cooked in any way and not eaten as a loss; they need not be. Cold poached eggs should be recooked and utilized as a salad garnish, or mixed with a cream sauce for fish, or chopped and added to cabbage salad. Fried or scrambled eggs left from a meal can be mixed with minced meat for the breakfast hash. Soft-boiled eggs should at once be reboiled until hard, then they are ready to be chopped and added to a cream dressing and served on toast for the children's supper or the family luncheon. In hard-boiling eggs where the yolks only are to be used, separate them carefully and drop the yolks into boiling water and put the saucepan where the water will boil but not bubble; in fifteen minutes they will be hard and mealy, and the whites are saved for use in another dish. The shells of eggs should be carefully washed before they are broken and then they can be saved for the clearing of soups, jellies, and coffee, if you boil it. Crush the eggshells, put them on a plate at the oven door until they are dry, then put in a glass jar. Before using, soak in cold water for twenty minutes. Four shells will clarify a quart of gelatin or an equal quantity of soup.

It is appalling to see the amount of succulent juices which many cooks send swirling down the sink. The water in which vegetables are cooked should always be saved. Onion water, for instance, gives the necessary flavor to a tomato or vegetable soup. No matter how carefully we boil our foods, more or less of the flavor and mineral salts are lost. Cabbage and cauliflower water make a good foundation for a cream or vegetable soup without meat. Only potato water and the first water in which old beans are cooked are not desirable. The last water in which beans are boiled, before they are baked, may be seasoned with tomato and served as a bean bouillon. When you boil rice use plenty of water and save it, then use it to add nutriment to a vegetable soup, or boil it down and make blanc-mange of it.

Did you ever think of turnip sprouts as a by-product which could be utilized? They are usually rubbed off and thrown away, but they make splendid greens and, served with French dressing, a good salad. Then, too, the very greenest and toughest tops of celery—always discarded—should be dried, powdered, and put into bottles for summer use. Chop them fine, put on pieces of brown paper, and dry in the oven. Put in a little cel-

ery seed and freshly ground black pepper, the latter aids in the keeping and intensifies the flavor. Do not throw away a single leaf of the cabbage, even the outside green leaves may be scalded, the mid-ribs removed, and the leaves used for Egyptian rolls. Put a tablespoonful of chopped meat in each and roll it up and tie. Cook these in salted water and serve with a cream sauce.

A few spoonfuls of either fresh or canned peas, string beans or Lima beans, a little spinach or a few slices of beet, potato, or celery, served on lettuce with French or other dressing, make most attractive individual salads. Those who do not care for salads, however, can find many uses for vegetable bits instead of consigning them to the waste bucket. Cauliflower which is left, even if it has been covered with sauce, may be chopped, put into a baking dish, covered with grated cheese, and served next day as cauliflower au gratin—a delicious dish. A few teaspoonfuls of tomatoes left may be added to the eggs for an omelet, or with a little water it may be made into a sauce. If one has had boiled rice for dinner and there is a cupful left over, add to it an egg, mix and season with salt and pepper, and form into cakes; it will serve four.

Children's Clothes That are Easily Made

Designs by
Grace Margaret Gould

THE children are always outgrowing their clothes, a problem that is particularly difficult for you, their busy mother. Now let me tell you what I would do to make this task easier. I would have their clothes so simple that they can be made in the shortest time imaginable, but when I say simple I do not mean that they should not be attractive, for I always believe that is necessary for them as well as for you and me. That is why I spend so much time on the designs for the WOMAN'S HOME COMPANION patterns, making them just what I know you, the busy mother, will want. Try some of the patterns shown on this page and see if you do not agree with me. I will be glad to tell you anything you want to know about using these patterns if you will write a letter enclosing a stamped and self-addressed envelope for the personal reply.—G. M. G.



No. 2173—Sailor Suit with Notched Collar

4 to 12 years. Quantity of material required for 8 years, five yards of twenty-seven-inch material, or three and three-fourths yards of thirty-six-inch, with one-half yard contrasting material for trimming. The price of this pattern is ten cents

No. 2216—Girl's Dress: Large Armholes

6 to 12 years. Material required for 8 years, three and three-fourths yards of twenty-seven-inch material, or two and seven-eighths yards of thirty-six-inch material, with one-fourth yard of contrasting material for collar. Price of this pattern, ten cents



No. 2329—Blouse and Knickerbocker Suit

6 to 12 years. Quantity of material required for 8 years, four and one-fourth yards of twenty-seven-inch material, or two yards of forty-five-inch material. This is a practical suit for school wear. The blouse may be made of madras. Pattern, ten cents

No. 2151—Single-Breasted Norfolk Suit

6 to 12 years. Quantity of material required for 8 years, three and three-eighths yards of thirty-six-inch material, or two and three-eighths yards of fifty-four-inch. An old suit of father's may be converted into this Norfolk suit. Pattern, ten cents

No. 1441—Boy's Pajamas with Pocket

2 to 6 years. Quantity of material required for 6 years, three and one-half yards of twenty-seven-inch material, or two and one-eighth yards of thirty-six-inch material. Even the very tiny boy wears pajamas, and this little suit with its side pocket is sure to appeal to him. The price of this pattern is ten cents

No. 1472—Child's Petticoat and Underwaist

2 to 10 years. Quantity of material required for 6 years, two and three-eighths yards of twenty-seven-inch material, or two yards of thirty-six-inch material. This little combination can be made most practical to wear under thin dresses in cool weather, as the pattern provides for plain, long, tight-fitting sleeves. Pattern is ten cents



No. 1687—Girl's Tucked Nightgown

6 to 12 years. Material required for 8 years, four and three-fourths yards of twenty-four-inch material. This nightdress is sure to prove practical for the little girl. It combines daintiness and practicability, the high neck and long sleeves being desirable for children. The collar, cuffs, and band could be of Cluny lace or embroidery. Pattern, ten cents

No. 2204—One-Piece Combination Garment

1 to 4 years. Quantity of material required for 2 years, one and one-half yards of twenty-two-inch material, three and one-fourth yards lace, and one yard of insertion. This combination garment has many good points. It is so simple that it is both easily and quickly put together, and then it launders very well. The price of this pattern is ten cents



No. 2421—Russian Blouse Dress: Kilted Skirt

6 to 12 years. Material for 8 years, five yards of twenty-seven-inch material, or three and three-fourths yards of thirty-six-inch material, with one-half yard of lace for collar. This little dress will be very pretty for party and best wear if developed in soft crepe, voile, or mull. Price of pattern, ten cents

No. 2413—Girl's Belted Coat with Flat Collar

2 to 10 years. Material for 6 years, three and one-fourth yards of twenty-seven-inch, or two and three-eighths yards of thirty-six-inch, with one-fourth yard of contrasting material. This coat would be very pretty made of wool crepe, Bedford cord, or a soft worsted and trimmed with velvet. The price of this pattern is ten cents

THERE will be a big display of the new spring fashions in the next issue of FARM AND FIRESIDE, dated February 28th. Two full pages will contain a variety of attractive costumes for women and young girls, and news of the spring styles that will interest every woman.

In the March 24th issue there will be maternity clothes that combine comfort and style in a most attractive way, as well as clothes for the new baby.

There is only one way of securing WOMAN'S HOME COMPANION patterns, and that is by mail. The easiest way to order is to use the pattern coupon printed in the lower right-hand corner of this page and send to the pattern depot nearest your home.



No. 2420—French Dress with Tucked Skirt

2 to 6 years. Material required for 4 years, three and three-eighths yards of twenty-four-inch material, or two and one-fourth yards of thirty-six-inch material, with one fourth of a yard for yoke. So simple is this dress that it takes almost no time to make it, yet it is very dainty. Pattern, ten cents

No. 2417—Double-Breasted Overcoat: Large Pockets

2 to 12 years. Quantity of material required for 8 years, three and three-fourths yards of thirty-six-inch material, or two and one-half yards of fifty-four-inch material, with one fourth of a yard of contrasting material, which can be velvet or plain cloth for the standing collar. Price of this pattern, ten cents



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Over the Threshold

I HAD buckled the green curtains of my berth, and the swaying train tore on through the inscrutable night. I sat up, watching the myriad stars and the great black fields running down into the past like our deeds that are done. A night on a sleeper seems to me like a vision into the very heart of a poem—the great, universal poem of life itself. We speed through the dark, incomprehensible world, borne on by a power we half trust, half fear, while radiant thoughts shine down upon us from the heights where enlightened purposes and sweet friendships are burning their lamps.

I was more than usually exalted on the night of which I write, for Rosaltha lay in the berth above me. I was bringing my little temporary foster-child back from Chicago, after two weeks in a hospital for the removal of adenoids and tonsils. It seemed to me that written straight across the face of life was the word *Opportunity*. The opportunity was mine to make Rosaltha a creditable citizen of Childhood-land. Fortunately I did not see how large some of the difficulties were to loom in front of her and me. Fortunately, I say, and yet a real difficulty seems to me to be less an obstacle than it is an inspiring gauge of our utmost powers. How strong, how efficient, are we to surmount it?

Adenoids are spongy growths at the back of the nose. They fill up the space there so that there is not adequate room for air to enter, and consequently the lungs are undernourished, and various diseases of the breathing system are established. Usually the sufferer has a constant cold in the head. The condition enormously increases the danger from measles, diphtheria, whooping cough, or pneumonia, and predisposes to tuberculosis. It also sets up catarrh at the opening of the ventilating tubes passing into the ear from the throat, which results in partial deafness. The child who has them sleeps restlessly and snores; his face has a characteristic appearance, known as the adenoid expression, marked by a stupid heaviness around the chin and an open mouth, and by a depression of the bridge of the nose, causing a decided upward turn of the nostrils.

Now, as children learn through their senses it is obvious that a condition which interferes with hearing and smelling blocks two of their highroads to knowledge. Furthermore, an impure and insufficient blood supply means a starved brain without vigor enough to do its work. The resulting stupidity in its turn occasions bitterness in the poor tot, whose teacher is continually irritated with it, whose playmates are supercilious, and whose mother, even, is rasped and uncomprehending.

In addition to being asphyxiated by adenoids, little Rosaltha had been a constant sufferer from sore throats and indigestion, due to enlarged tonsils. When the tonsils, of which there are two, one on each side of the throat, are normal they have no power to absorb the contents of the mouth, but when they become diseased and enlarged they soak up all the poisons there. The most cleanly mouth, it must be remembered, is full of poisonous organisms which the white corpuscles in our blood are fighting to the death in a continuous war. Now, if these germs are absorbed and passed on, as they will be, to the general circulation, we are going to have some battles in which the Army of Righteousness, as we will call the white corpuscles, are vanquished by the Army of Disease—that is, the poisonous substances. The result is indigestion and malnutrition. Rosaltha's waxen face, sunken chest, and large stomach bore witness to these disorders.

There is almost no tendency for adenoids and enlarged tonsils to get well themselves. Even local applications and treatment are usually unavailing. For this reason I took Rosaltha to a calm, clear-thinking surgeon who—oh, so mercifully, it seemed to me!—removed her awful handicaps. There was nothing to it but a bad smell in her nose for a few minutes, then a deep sleep and an awakening in a dainty bed, with a slight soreness of her nose and throat—and life in its fullness stretching ahead of her.

I kept her in the hospital for two weeks, twice the time usually required, because of the railroad journey which we must take to get home, and which might have been harmful in the case of unhealed wounds. Moreover, it was February and the air was wind-swept and irritating. These operations should, where possible, take place in late spring

The Child at Home



By Helen Johnson Keyes

When mothers talk together there is generally a host of questions to be asked. Any inquiries addressed to Mrs. Helen Johnson Keyes, Farm and Fireside, Springfield, Ohio, will receive interested attention.

or summer, but Rosaltha's condition was so full of suffering that I decided every day of postponement was dangerous.

The rocking train was putting me to sleep, and as I put my head in the pillow I forgot even Rosaltha, dreaming only of those three darlings of my own whom I should fold in my arms when morning dawned and gave me back to my home.

As soon as we got off at the station of our own village my two little boys, Mark and Thomas, came rushing upon me, nearly knocking me down with their hugs. As soon as I got my breath I gave voice to my anxiety:

"Where is your sister?"

"Oh, she couldn't come in her uniform," explained four-year-old Thomas. "Her uniform?"

Before I could get a reply he and Mark were making the snow fly with their somersaults, and I took Rosaltha by the hand and walked along the road.

"Why do you suppose Mark and Thomas are so happy?" I asked, expecting to talk a little about children's love for their mothers.

"Because I can breathe," she replied promptly.

From that surprised moment I felt that Rosaltha had adopted us as her friends.

I kept puzzling about Ruth's absence and what had been meant by her "uniform," and it was not without anxiety that I opened my front door. There in the hall stood my little ten-year-old comrade dressed like a trained nurse. I caught her in my arms, but I could see that her absorbing interest was not my return but Rosaltha's. I swallowed a little lump of disappointment and reminded myself that children are dramatists and live in their play. Ruth's play just then was hospital, patient, and nurse.

"Did Mrs. Merrington make you that lovely uniform?" I asked. Mrs. Merring-



There she stood dressed like a trained nurse

ton was the neighbor who had stayed at the house during my absence, leaving just before I got home to attend to her own Saturday baking.

"Yes, but I helped lots," said Ruth.

Very gently she led Rosaltha up-stairs, and a few minutes later I found that the little nurse had put her patient on a couch and was solemnly fanning her, despite the fact that the mercury in the room stood at 64 degrees!

I began unpacking my suitcase.

"Day after to-morrow," I said, "is Valentine's Day, and we are going to have a party at six o'clock. See this mosquito netting and these little red flower seals? I am going to dress every one of you youngsters like a real old-fashioned lacy valentine, and we'll send the boys this afternoon to invite all of Rosaltha's family and your teacher and the minister's family. Only, I'll have to have the help of both you girls in cutting out the valentine dresses and making my very best cakes and things."

The trained nurse forgot her dignity and danced up and down the room. Rosaltha sat up and tried to understand what it all meant. Then the boys came tumbling in.

"I'll write the rimes for the valentines," cried Mark, "and pin 'em 'cross the costumes. I know a lot of rimes—

"Roses are red, violets blue,
Sugar's sweet, and so are you!"

"We got to have three parties," Mark reminded me. To-day's Lincoln, and by and by is Washington."

It was a part of our family-life religion always to observe the special days.

"Sure enough," I consented. "I just wondered if anyone was going to remember. Well, then, I'll tell you a surprise I arranged before I went away: Mr. Macy is coming to supper this evening, and is going to bring the book Mr. Lincoln wrote his name in, and tell us his story about Mr. Lincoln's teaching him to recite the Constitution when he was a boy."

I was buried under an avalanche of three delighted children.

"Well, how do you like us, Rosaltha?" I asked when I emerged.

"All right," replied the child shyly.

Then she slid off the lounge and came over to me. "I like to breathe," she added as I put my arm round her.

The Burden of Yesterday

[CONTINUED FROM PAGE 30]

offering the envelope. As Drake read the letter's contents an expression came to his face, of such dazed delight that Robert exclaimed, "What is it, sir? Good news?"

"It offers me a working partnership—that's all," gasped the older man, handing the communication over.

"What?" Robert shouted. "That's great!"

"Never say you owe me anything again," Mr. Drake cried in a voice choked by emotion. Then rising, and looking about with excited alertness, "Now ring down-stairs and find out when the next train leaves for San Francisco. I'm going on it. A boat sails for Honolulu to-morrow and one the next day. I don't know which she takes. I may catch her."

Drake made it. At the San Francisco terminal his eyes immediately were attracted to Beruice, jumping up and down with excitement, and beside her—Faith.

He remembered nothing more very clearly until he had crushed her in his arms, and held her there, in spite of her murmur.

"Will, you mustn't! Oh, Will!"

"Nonsense! Everybody gets kissed in a railroad station."

Faith's cheeks burned with blushes. "I wanted you so!" she whispered. "I've written dozens of letters and telegrams asking you to come, then tore them up again because I knew it wasn't—right. But now—" she slipped a shy hand under Drake's arm, "with Mr. Cumlock and Laura married, Ernestine and Robert engaged, and you and I—re-engaged—"

"Let's telegraph Mother," Drake suggested. "She'll be so happy." That done, a taxicab took them to Faith's hotel, where they sat down in one of the reception-rooms, constrained to formality by their surroundings.

"Isn't there any place where we can be alone?" Drake questioned quizzically.

"I'm mighty happy, but I could be happier if—" He smiled and tried to take her hand, then suddenly burst out, "Why don't we get married? I'd like to know what we're waiting for? It seems to me we've had enough of waiting."

Faith lowered her head for a moment, then, looking up, whispered, "I'll marry you this minute if you want me to."

Drake rose, tall, straight, his shoulders freed from the burden of yesterday he had borne so long.

"I want you to," he said. "I'll go to find out about a license and a minister."

[THE END]

The Experience Bazaar

Editorial Note—Here is an open market for the exchange of experiences. Will you not bring your problems and leave them behind? Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

DEAR FIRESIDE EDITOR: An old friend said to me the other day: "I want to speak to you of my son John. You know he is such a nice-looking man and is kind and affable, and everybody likes him when he is sober. But he has gotten in with a lot of disreputable people, drinks to excess, smokes quantities of cigarettes, and, as naturally follows, associates with undesirable women. You know there is no one who has so much influence over a man as a woman, and if I could get him acquainted and friendly with some good woman she would influence him and he would be all right. Now, I know you have a niece, an attractive girl with a lovely disposition and a beautiful character. If you will invite her to your home and ask my son to meet her there, there isn't anything I wouldn't do for you. If he marries her it will be the salvation of him."

I certainly was stunned by such a selfish and cold-blooded proposition. "If he marries her!" Do you think this man who made the proposal was a rude, ignorant boor? On the contrary, he is a man who stands high in his community and is a successful physician. His anxiety to see his son a respected citizen must be his excuse, for his experience should have taught him its cruelty and immorality.

I asked him, "What has John, a man of forty years, to offer any good girl or woman? Do you think a dissolute life, a diseased body, and a blackened soul are gifts to offer to any good, pure woman? For over twenty years, according to your own statement, he has been under your displeasure for his manner of life. You have remonstrated, threatened, and entreated, appealing to honor, affection, self-interest, and by every known means sought to lead him in the way of right living, and have failed. He married in defiance of you a thing of the streets, who quickly tired of him. You say she made him what he is. *Did* she? He knew the character of the woman he married; did he not meet her in a house of prostitution even in his youth? Now you tell me that by woman he fell and by woman alone can be raised. No, my dear sir, no such sophistry appeals to

me, nor will it to any other well-balanced woman. By his own effort he must rise, if he ever does. There are and will be helping hands. You expect me to assist you in mating the pure soul and body of a lovely girl to the sin-blackened body and soul of your son! No; not to save ten thousand such as he would I help defile the purity of even one girl."

It makes me heartsick when I think of it, and know that he voiced the opinion of a multitude of men. Such men as he think it no crime to marry pure womanhood with all the filth of body and mind contracted by long association with the underworld. It is high time that mothers and fathers should exact purity for purity. Purity for the boy as for the girl should be the slogan of every parent, teacher, and preacher. Then we shall be no longer fearful of the happiness of our children, and their children shall rise up and call them blessed. F. C. F.

Preserving Good Looks

DEAR FIRESIDE EDITOR:—Once when the children were small and we were very poor, it seemed impossible for me to do everything that fell to my lot and still find time to keep unsightly wrinkles at bay. During the forenoons I'd have visions of my children as they would be ten years hence and ideals of all I meant to be to them then. Just before retiring is the time for a telling facial massage, but nights found me too tired to care. One day while washing the kitchen woodwork I had an inspiration. We were living in a rented house at the time. We might live in many different houses during our earthly journey, but my one face had to last me a whole lifetime. Upon its care depended largely whether I was to have a charming personality or a repulsive one. For the children's sake I chose the former, and I never neglected my appearance again, although I did often neglect minor household duties. Time has proven that it was sensible for me to do that. I have good health, the confidence of my children and the admiration of my husband. L. U. E.

The First Valentine

By Mrs. W. A. Camp

JACK FROST spun the lacework;
The forest sent a *hart*;
Summer wove the gariand, and
The swallow gave a *dart*.

When 'twas put together,
Winter wrote the *rime*;
Violets paid the postage;
(One *scent*, at just that time.)

'Twas mailed to "Merry Springtime;"
The postman was a thrush;
And when it was delivered,
Spring paid him with a blush.



The Magic Flight of Thought

AGES ago, Thor, the champion of the Scandinavian gods, invaded Jotunheim, the land of the giants, and was challenged to feats of skill by Loki, the king.

Thor matched Thialfi, the swiftest of mortals, against Hugi in a footrace. Thrice they swept over the course, but each time Thialfi was hopelessly defeated by Loki's runner.

Loki confessed to Thor afterwards that he had deceived the god by enchantments, saying, "Hugi was my thought, and what speed can ever equal his?"

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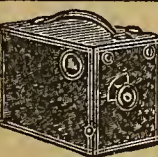
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From Charles W. Eliot's Address on Washington

Delivered Before the Union League Club of Washington, February 23, 1906

THE virtues of Washington were of two kinds, the splendid and the homely. I adopt, for my part, some consideration of Washington as a man of homely virtues.

I invite your attention to the early age at which Washington began to profit by the discipline of real life. He was a public surveyor at sixteen years of age. He could not spell well, but he could make a correct survey, keep a good journal, and endure the hardships to which a surveyor in the Virginia wilderness was inevitably exposed.

Washington was, at twenty-one, an accomplished woodman, an astute negotiator with savages and the French, and the cautious yet daring leader of raw, insubordinate frontiersmen who were to advance five hundred miles into the wilderness with nothing but an Indian trail to follow.

In 1775, at twenty-three years of age, he was a skillful and experienced fighter, and a colonel in the Virginia service. Yet Washington never showed at any age the least spark of genius. He was only sober, sensible, honest, and brave. He was a planter and sportsman—a country gentleman. All his home days were spent in looking after his farms, in breeding various kinds of domestic animals, in fishing for profit, in attending to the diseases and accidents which befell the live stock, in erecting buildings and repairing them, in caring for or improving his mills, barns, farm implements, and tools.

He always lived very close to nature, and from his boyhood studied the weather, the markets, his crops and woods, and the various qualities of his lands. He was an economical husbandman, attending to all the details of the management of his large estates.

Again, he was, as I have already indicated, an economical person, careful about little expenditures as well as great, averse to borrowing money, and utterly impatient of waste. He entered in his

account, "Thread and needle, one penny," and used the thread and needle himself.

All this closeness and contempt for shiftlessness and prodigality were perfectly consistent with a large and hospitable way of living, for during many years of his life he kept open house at Mount Vernon. This frugal and prudent man knew exactly what it meant to devote his "life and fortune to the cause we are engaged in, if needful," as he wrote in 1774. This was not an exaggerated or emotional phrase; it was moderate, but it meant business. He risked his whole fortune.

Duty Was His Watchword

What he lost through his self-sacrificing services in the Revolutionary War is clearly stated in a letter written from Mount Vernon in 1784: "I made no money from my estate during the nine years I was absent from it, and brought none home with me. Those who owed me for the most part took advantage of the depreciation and paid me off with sixpence on the pound. Those to whom I was indebted I have yet to pay without other means, if they will wait, than selling part of my estate or distressing those who were too honest to take advantage of the laws to quiet scores with me."

Washington's mind dwelt very little on rights and very much on duty. For him patriotism was a duty, good citizenship was a duty, and for the masses of mankind it was a duty to clear away the forest, till the ground, and plant fruit trees. For men and women in general, he thought it their duty to increase and multiply and to make the wilderness glad with rustling crops, lowing herds, and children's voices. When he retired from the Presidency he expressed the hope that he might "make and sell a little flour annually." For the first soldier and the first statesman of his country, surely this was a modest anticipation of continued usefulness.

We think more about our rights than our duties; he thought more about his duties than his rights. Posterity has given him first place because of the way in which he conceived and performed his duties; it will judge the leaders of the present generation by the same standard, whatever their theories about human rights.

Finally, I ask your attention to the

striking contrast between the wealth of Washington and the poverty of Abraham Lincoln, the only one of the succeeding Presidents who won anything like the place in the popular heart that Washington has always occupied. Washington, while still young, was one of the richest men in the country; Lincoln, while young, was one of the poorest. Both rendered supreme service to their country and to freedom. Between these two extremes men of many degrees as regards property-holding have occupied the Presidency, the majority of them being men of moderate means. The lesson to be drawn from these facts seems to be that the Republic can be greatly served by rich and poor alike, but has oftenest been served creditably by men who were neither rich nor poor. It is comforting to remember that true patriots and wise men are bred in all the social levels of a free commonwealth, and that the Republic may find in any condition of life safe leaders and wise rulers.

"THE character, the counsels, and examples of our Washington—they will guide us through the doubts and difficulties that beset us; they will guide our children and our children's children in the paths of prosperity and peace, while America shall hold her place in the family of nations."—Ed Everett—Speech, July 5, 1858: *Washington Abroad and at Home*.

Uncle Ike on Washington

By John Brown Jewett

WHATEVER good or profit brings Consists of two important things: The harvest is the thing we need, But just as needful is the seed.

And as a harvest cannot grow But from the kind o' seed we sow. So fathers that are worth the name. You'll find, as sons were jest the same.

And plain enough it seems to me, The story o' the cherry tree Shows that the choppin' job was done By jest that very kind o' son.

Important, then, it is, you see, A country's father for to be, That first you be a first-class son, Right close at home, like Washington.

Some Stories About Lincoln

LINCOLN had little patience with any assumption of importance or aristocracy. Two stories illustrate this trait: One day an office-seeker came to find the President, who treated him with nothing more than ordinary courtesy.

"Take a chair, sir," he said.

"Mr. Lincoln," replied the guest, "I am So-and-So, and I have filled such-and-such offices."

"Ah," responded the chief magistrate, "take two chairs, then."

A member of the Government once found Mr. Lincoln's long figure bent over in the occupation of shining his shoes.

"Why, Mr. President," exclaimed the visitor, "you surprise me; I never blackened my own shoes in my life."

"Haven't you?" queried Lincoln.

"Whose shoes have you blacked?"

He made his points and brought home his lessons largely by means of stories and parables. In the midst of the war, when General McClellan's failure to move was worrying the country, President Lincoln was beset with advice as to how he should act:

"Gentlemen," he said, "suppose all the property you were worth was in gold and you had put it in the hauds of Blondin to carry across the Niagara River on a rope, would you shake the cable or keep shouting at him, 'Blondin, stand up a little straighter—Blondin, stoop a little more—go a little faster—lean a little more to the north—lean a little more to the south?' No, you would hold your breath as well as your tongue and keep your hands off until he was safe over. The Government is carrying an enormous weight. Untold treasures are in their hands; they are doing the very best they can. Don't badger them. Keep silence, and we will get you across."

Miss Ida Tarbell closes her masterly

life of Lincoln with the following words: "The real Lincoln is the simple, steady, resolute, unselfish man whose supreme ambition was to find out the truth of the questions which confronted him in life, and whose highest satisfaction was in following the truth he discovered. He was not endowed by nature with the vision of a seer. His power of getting at the truth of things he had won by incessant, mental effort. From his boyhood he would understand, though he must walk the floor all night with his problem. Nor had nature made him a saint. His lofty moral courage in the Civil War was the logical result of lifelong fidelity to his own conscience. From his boyhood he would keep faith with that which his mind told him was true, though he lost friend and place. "When he entered public life these qualities at first won him position, but they cost him a position more than once. They sent him to Congress, but in 1849 they forced him out of public life. They brought him face to face with Douglas from 1854 to 1858, and enabled him to shape the moral sentiment of the Northwest, but later they defeated him. They made him Illinois' candidate for the Presidency in 1860, but they brought upon him as President the distrust and hatred of even his own party. It took four years of dogged struggle, of constant repetitions of the few truths which he believed to be essential, to teach the people of the United States that they could trust him. It took a murderer's bullet to make them realize the surpassing greatness of his simplicity, his common sense, and his resolution. It is this man who never rested until he had found what he believed to be the right, and who, having found it, could never be turned from it, who is the real Lincoln."

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If, in one car, you get a more powerful motor for less money than *that* car offers you still greater value.

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And so on throughout the entire car. If the fundamentals are larger, better and more powerful and the purchase price is less, which does it seem reasonable to buy?

The closer you make such an investigation the better the Overland shows up—and the harder it is on our competitors. Why is it you seldom see any of our competitors advertising their specifications? Are they afraid or ashamed?

Be that as it may, here are the facts:

The \$950 Overland has a motor that is as large and as powerful as in most \$1200 cars. *Compare and see.*

The \$950 Overland has a wheelbase as

long as on most \$1200 cars. *Compare and see.*

The \$950 Overland is roomier, has greater leg stretch and more actual comfort than most \$1200 cars. *Compare and see.*

The \$950 Overland has tires as large as on most \$1200 cars. *Compare and see.*

The \$950 Overland has electric lights throughout, the same as \$3000 to \$5000 cars. *Compare and see.*

The \$950 Overland has just as complete and just as expensive equipment as most \$1500 cars. *Compare and see.*

The \$950 Overland is just as superbly and richly finished as any \$1500 car. *Compare and see.*

The \$950 Overland is manufactured just as carefully as any car. *Compare and see.*

And such greater value for less money is possible on account of our enormous and therefore economical production methods, because we are the largest manufacturers in the world of this type of car.

Why hesitate? There are more Overlands being sold today than any other competing car made. And this is because we continue to give more standard car for less actual money.

The purchase of an Overland will save you a clear 30%.

Get in touch with the nearest Overland dealer. Handsome catalogue on request.

(Please address Dept. 62)

The Willys-Overland Company, - Toledo, Ohio

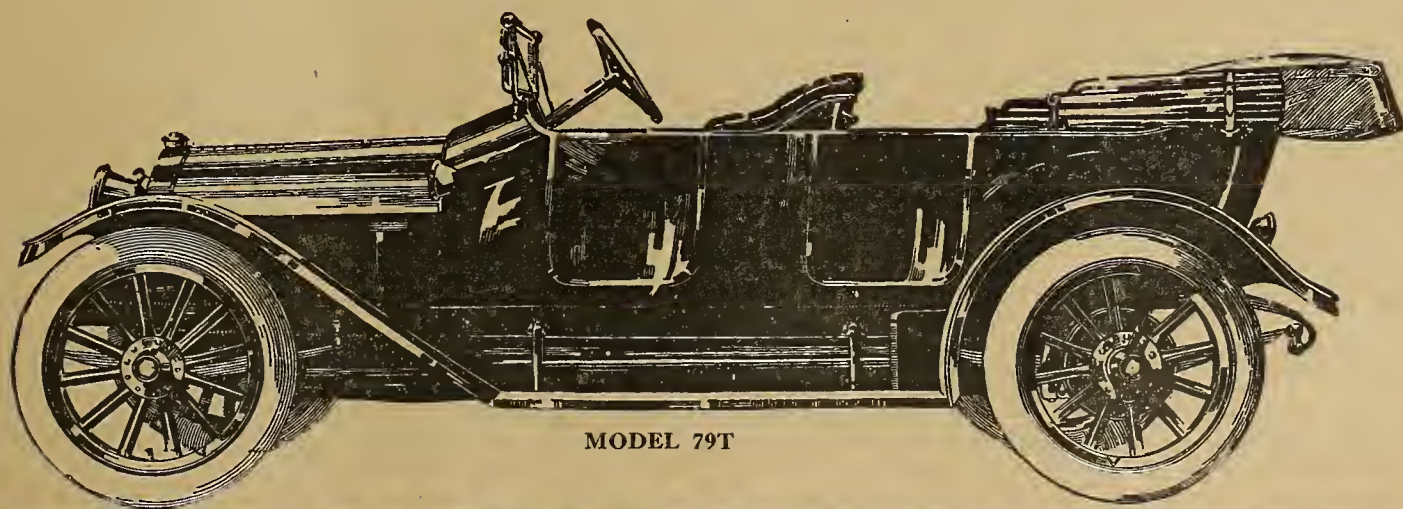
Specifications:

Electric head, side
tail and dash lights
Storage battery
35 horsepower motor
114-inch wheelbase
Three-quarter floating
rear axle

Timken and Hyatt
bearings
33 x 4 Q. D. tires
Brewster green body,
nickel and aluminum
trimmings

Deep upholstery
Mohair top, curtains
and boot
Cowl dash
Clear-vision, rain-
vision windshield

Stewart speedometer
Electric horn
Flush U doors with
concealed hinges
With electric starter and
generator \$1075—f. o. b.
Toledo



Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks. Full information on request.

Henderson's Tested Seeds

The firm of Peter Henderson & Co. was founded in 1847 and the 67 years of successful seed-raising and selling that is behind every package of Henderson's seeds must and does make them the best that it is possible to buy. In your grandfather's day, Henderson's was the standard by which other seeds were judged, and the same condition exists in 1914. Our methods of seed-testing, which were the best three generations ago, have been improved upon from year to year and are today still the best.

The unknown quantity in your garden is the quality of the seeds you plant, and you cannot be too careful in seeing that you obtain the best procurable. The most critical of all planters in the choice of their seeds are market-gardeners or truck-farmers. Perhaps the best endorsement of the quality of Henderson's seeds is the fact that Peter Henderson & Co. supply a larger number of professional growers than any two seed-houses in the world. The very existence of these men depends upon their receiving the best quality of seeds. That Peter Henderson & Co. are easily pre-eminent in the professional growing field is the best endorsement of Henderson's seeds that can be given. Henderson's seeds are tested seeds.



"Everything for the Garden" is the title of our annual catalogue. It is really a book of 208 pages, handsomely bound with a beautifully embossed cover, 14 colored plates and over 800 half tones, direct from photographs, showing actual results without exaggeration. It is a library of everything worth while, either in farm, garden or home.

A Remarkable Offer of Henderson's Specialties

To demonstrate the superiority of Henderson's Tested Seeds, we have made up a Henderson Collection, consisting of one packet each of the following six great specialties:

Ponderosa Tomato

Big Boston Lettuce

Henderson's Invincible Asters

Mammoth Butterfly Pansies

Giant Spencer Sweet Peas

White Tipped Scarlet Radish

In order to obtain the largest possible distribution for our annual catalogue **"Everything for the Garden,"** we make the following unusual offer: Mail us 10c and we will send you the catalogue, together with this remarkable **"Henderson's Specialty Collection."**

Peter Henderson & Co.

35-37 Cortlandt Street, New York City

I enclose herewith 10c for which send catalogue and "Henderson's Specialty Collection," with complete cultural directions, including the "Henderson Garden Plans."

Every Empty Envelope Counts as Cash

This collection is enclosed in a coupon envelope which, when emptied and returned, will be accepted as 25c cash payment on any order of one dollar or over.

PETER HENDERSON & CO.,
35-37 Cortlandt St., NEW YORK CITY

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FARM AND FIRESIDE

EVERY OTHER WEEK

THE NATIONAL FARM PAPER

SATURDAY, FEBRUARY 28, 1914

5 CENTS A COPY



How to Start Balky Horses—See page 6

LOOK FORWARD! THESE GOOD THINGS ARE COMING!

The Fruit Buds

Without them there is no fruit. With them the trees yield to the utmost of their ability, and if they have been cared for properly that means money for the fruit-grower. Over a large part of the fruit-growing section of the country the buds are threatened each spring by the frost. Very frequently the work of the frost is more than a threat; it ruins the prospects for a crop. For a number of years farmers have been able to fight that evil successfully. The sum total of experience along the lines of fighting the frost will be brought out in the next issue of FARM AND FIRESIDE.

Devices for the Poultry Yard

In the springtime they are needed. Sometimes it is a very simple matter to care for chicks if we have the right appliances. One man who has to work late at nights, and as a result sleeps late in the morning, tells of his scheme for letting the chickens out of the henhouse while he continues to sleep. Another man thinks he knows of the very best way to care for the sitting hen with little trouble to himself and the best of convenience for the hen herself. All of these are ideas you will be interested in.

Planning the Garden

That same work comes up every year. You may have had a very successful garden last year, but there was one part of it perhaps that might have been better, and you know it. The stories of the successful gardens of other men will be of profit to you. They may suggest a solution for the difficulty you have not yet overcome.

The Ear of Corn

Did you attend the corn show this past year? If not, you have missed a great deal of inspiration. If you placed a sample of corn on exhibit and attended the show besides, you have received all the benefit such a contest holds in store for anyone. After it was all over, what did you think? Were you satisfied that your prize ear would be the one in the field that would raise the standard of the yield? Whether you answer yes or no to that question, look for two photographs that tell a story about two ears of corn. We will show them in the next issue.

Taxes and Death

In China it is said that the average man fears only those two things. In America it is somewhat different. And yet the tax question has not been settled. A reader who has made a marked success of farming in Wisconsin, in writing about his taxes has written on the subject of your taxes and mine. For that reason you will read with interest what he says.

Are Farmers Swindlers?

Of course they are not. That would be your first answer. And it may be the right one. It may be the answer you will make after reading the opinion of one reader whose statements will be printed soon. But FARM AND FIRESIDE would like to have you express yourself, if you will, after you have read that article. Are farmers swindlers?

How She Was Stirred Up

We are all fond of many middle-aged unmarried women in our acquaintance, and we feel a wide distinction between them and old maids. How a certain Neighborhood Improvement Society stirred up the unmarried Ann, and so saved her from becoming an old maid, is a story full of sound philosophy.

The Children of Ireland

In honor of St. Patrick's Day we shall take a trip to the Emerald Isle to see what the farm children do there, and what they think about America.

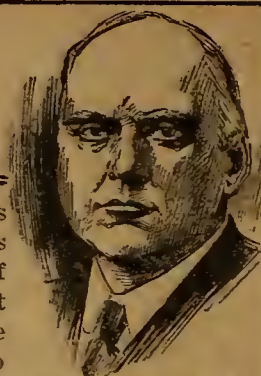
A Remarkable Achievement

In New Mexico there lies a farm of ninety-six acres, seventy of which are planted to alfalfa. This farm was rescued from the encroachment of the Rio Grande River by the diversion of the river's course to its old channel, which had become blocked. Who accomplished this feat, and who manages the lucrative farm? So much but no more of the secret we shall whisper now: it is a woman.

Kindergarten at Home

Advice as to how to buy kindergarten materials and use them at home will be of value to mothers who desire such training for their children, and who live where the school curriculum does not include this elementary grade.

WITH THE EDITOR



"What Shall I Do with My Life?"

It isn't often that a person is found who asks himself this question. This is a world of drifters. Most people avert their faces from a square look at the future. They have not the heart and courage for a grapple with life, face to face, and knee to knee. Some very successful lives are worked out on the plan of doing the first thing which presents itself, and doing it well, and letting plans for the future evolve naturally from the present. There is a good deal to be said for this. If we map out our course ever so carefully, contrary winds will set us tacking back and forth, and tempests will blow us out of our reckoning. The man who fights the fight of to-day and takes only such thought for to-morrow as to make it fit advantageously upon the dead end of to-day has some advantages. He can give an undivided mind to to-day's task.

But there are minds which are not satisfied unless life is all mapped and laid out, not only as to the road to be traveled but the actual length of each day's journey. Such a mind is that of a young man in Whiteside County, Illinois, who writes me this letter:

The Rules of Life and Living

I am going to take the liberty to request you to help me solve a question which confronts the majority of young men of my age. What shall I do with my life?

My reason for asking your help is because FARM AND FIRESIDE is the paper I learned to read when I was eight or nine years old. It happened to be an article on pigeons that attracted my attention. Since that time I became acquainted with you through your editorials in FARM AND FIRESIDE and by reading your book "The Good Ship Earth," which was published by the Bobbs-Merrill Company of Indianapolis.

Another reason is that you are the only man I know that commands as broad a view of life as you do that I feel I could approach with such a question. Here are some rules of life which I wrote on June 22, 1913, so I may have them always in concrete form:

The important thing in life is to get the most true enjoyment for yourself and others. "Regular employment at some work which satisfies the conscience and the judgment is essential to any true enjoyment of this life."—Carl Hilty.

I must choose work which will provide for growth, and give it constant attention until I am forty or forty-five years old. I had better quit business at forty with less, if successful, than at fifty with more; for by that time my habits would be hard to change. After my business is under way I must take from one to six weeks' vacation a year until I am forty, after which I will travel around the world.

I know my rules are not perfect, but I believe that by using common sense I can make them serve their purpose.

If you decide to help me, in my next letter I will describe myself, my likes and dislikes, and my financial condition. I assure you I am decidedly sincere in writing this, and I am sure I will profit by your superior wisdom if you choose to help me. I am a farmer's son, twenty years old. My mother is dead, and I don't feel my father has a wide enough knowledge of conditions to help me.

"If you decide to help me!"

Enjoy Life as You Live It

How can one person help another in such a matter? How can the adviser know anything about the conditions which will present themselves next year, next week, or to-morrow? And yet, there must be some value in advisers, or good advice would not have been for ages so highly prized.

I believe this young man is right in his test of successful life. The most successful life is the one which secures the most true enjoyment for itself and other lives. But true enjoyment may not mean riches or worldly success. It may mean self-sacrifice and the rejection of success. It may not mean happiness in the ordinary sense. I suppose that many will think the statement a strange one when I say that I believe that Jesus lived the happiest life possible to Him. He went to the Cross, it is true; but can you imagine a more miserable life than He would have lived—if that can be imagined—if He had refused to go? He so lived as to get the most true enjoyment out of life, for Himself and others.

This young man will probably have crosses to suffer. He wants to adopt a business which will allow unlimited growth. One business is about as good as another in that respect. I have known some very learned men who were narrow and limited. I have known unlettered fishermen who had developed great personalities. Why seek a new occupation expecting to find opportunity for growth in it? Is there any sphere in life fuller and more cultural than that of a farmer? I know of none. To be sure, many men who pass for farmers are devoid of any greatness of personality; but the same is true of men of all professions and occupations. Elihu Burritt as a blacksmith made a name as a master of languages. James Fagan, a switchman, has become an authority on certain branches of railroading. I once knew a man who lived and worked upon his farm who was known the world over as an astronomer.

The Need of To-day—Good Farmers

If this young man will take hold of the thing nearest to him—the farm—he will find that its avenues lead forth to every sort of development. He will study the great group of sciences which are related to farming. He will delve into the great and growing problem of rural life and its needs. He will find so many avenues of useful and happy work awaiting him that he will have only to choose. The need of the day is good farmers, not in the experiment station and on the demonstration train, but in the neighborhood.

What shall he do with his life? Give it to the farm and to farm life. Go to school—but with the resolve to return. Like all resolves, this will be subject to reconsideration; but the way to serve others is not to get above them but to stay with them. And when this friend approaches the age of forty he will smile at the thought of retiring, if he has found his work. He will then be approaching the best years for effective labor. He will probably not bother about sailing around the world; for the whole world comes to the man who serves his fellows in singleness of purpose and does his work well.

Robert L. Shier

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Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per agate line for both editions; \$1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/2 inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.

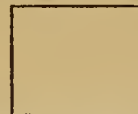


PUBLISHED BY
THE CROWELL PUBLISHING COMPANY
SPRINGFIELD, OHIO

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago, Illinois
Copyright, 1914, by The Crowell Publishing Company
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter

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Subscriptions and all editorial letters should be sent to the offices at Springfield, Ohio, and letters for the Editor should be marked "Editor."

Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVII. No. 11

Springfield, Ohio, February 28, 1914

PUBLISHED
BI-WEEKLY

Torturing the Balker

GOOD horsemen are agreed that balking usually rouses the ignorance, stupidity, bad temper, or cruelty of the driver. Bad disposition in the horse favors the development of the balking spirit, but rare is the case where a colt correctly handled will fail to develop into a tractable horse.

On another page are published a dozen or more suggestions and remedies that come within the pale of humane treatment for balkers. A score or more were barred out on account of their inhumanity. Among these were devices for choking the horse until he falls repeatedly to the ground; a remedy that would cause the links of a chain to be crushed into the skin and flesh of the balker; the use of a double-pointed instrument to be pressed automatically into sensitive parts of the horse's body; the use of infuriated cats and dogs and of toothed spring traps to terrorize the balker; caustics to burn the mouth and nostrils; and powdered substances to suffocate or blind the animal.

These and other inhumanly cruel treatments were submitted with the casual explanation that while they may be considered a little harsh, they are guaranteed to be effective.

All this raises the question why those who are in most respects law-abiding citizens will recommend or permit such flagrant cruelty in handling balky horses. When we witness the numerous and nameless cruelties which the horse continues to suffer, generally from unthinking and incompetent drivers, we wish for the horseless age without delay—or the driverless horse.

In the Place of a Railway

MR. E. BRIGHTWELL, an Oklahoma correspondent, writes us interestingly of the success of the township co-operative association of which he is secretary. He gives as one of the things which made it possible for their buying and selling in car lots to be a success, the presence of a spur railway track extending into the heart of the neighborhood. This was no doubt a great convenience, but not a necessary one. If goods had to be hauled long distances in wagons it would not have been any more of a drawback with co-operation than without it. Furthermore, where there are men enough co-operating, the hauling to remote neighborhoods can be done more cheaply by co-operation. A traction engine with a train of trail wagons, or a good motor truck operating all the time, would be cheaper than the ordinary methods of doing the work by individual effort. Such a plan takes the place of a railway. There is no reason why each neighborhood should not have its depot for freight to be hauled in full loads by something better than horsepower. Motor-truck hauling is beginning to compete with railways in many places. And co-operation can give to any neighborhood which has the freight its own train service, operating on the ordinary roads—if they are good; if not, they can be made good.

City Wisdom

CITY papers have severely criticized the Department of Agriculture for prohibiting importations of potatoes from countries where the crop is infected by powdery scab or other diseases. They pretend to speak for the consumers of potatoes in protest against the high cost of living. It is a good thing that the U. S. D. A. is in wiser hands than the editorial staffs. The potatoes used in the United States must in the main be grown here. Not all the surplus of all the nations of the world could supply half our needs by importation. It is the part of wisdom to act promptly and with the utmost strictness rather than allow this domestic sup-

ply to be endangered by an imported disease. The supply in this country is about normal; but even though the exclusion of foreign potatoes should cause a temporary shortage and even great distress, they should nevertheless be excluded. For the imported disease or pest, like the San José scale, the oyster-shell scale, the gipsy moth, the brown-tail moth, the phylloxera in the European grape regions, and even the Colorado potato beetle—which was an intruder into the East—the boll weevil, the chestnut disease, and dozens of other pests, rages with increased virulence in its new surroundings, and puts in peril the whole industry. In the interests of the home supply of potatoes, diseased potatoes should be shut out.

Breeding for Feathers and Hair

MR. F. W. KAZMEIER of the Poultry Department of the New York Agricultural College says in a communication to FARM AND FIRESIDE: "You will be interested in the fact that the English Leghorns which did such admirable work at the egg-laying contest at Storrs, Connecticut, were all of a low-down, broad, and deep-bodied build, and not very much along the lines called for by the American standard of perfection. Our English cousins have been breeding for egg production in their Leghorns, rather than fancy feathers, and the result is this low-down, broad, and deep-bodied Leghorn."

The taking of first place by English White Leghorns in both the Missouri and the Connecticut contests may not convince all our poultrymen that these English birds are better than ours.

It is known, however, that there are better layers in other countries than we have here. In any kind of live stock, feathers, hair, color, and trimmings may be bred, but when the breeder is looking at those things he is sure to neglect utility. It is hard to breed successfully for one thing. It is much more than twice as hard to breed for two. It is a hundred times as hard to breed for three. The way to get good layers is to forget about everything but eggs. The way to get good milkers is to forget about everything but milk. The dual-purpose fowl, like the dual-purpose cow, can be bred, but it takes a smarter man to breed her than one generally finds.

It is perfectly legitimate to breed for both eggs and meat, or both milk and meat, if one wants to undertake the task, but to add to these a lot of color and plumage tests is to give the breeder a foolishly hard task.

Isn't It About Time?



In for a house-cleaning.—Columbus (Ohio) Dispatch

Up to the Consumer

"WE ARE organized, and are willing to sell direct to housewives of Chicago if they will only insure us a steady market."

This is the substance of the message sent to the people of the cities by the Illinois Farmers' Institute. Just how well the farmers are organized may be a matter of opinion, but no doubt can exist as to the fact that the next great step in direct selling must be taken by, or at least in, the cities and towns. We must have something cheaper than the parcel post, too. Even in such matters as the sale of eggs, hampers, and mailable farm produce generally, the parcel post, while it offers a way out as against conditions of monopoly control, must always be too expensive for the great body of business between the farms and the homes of consumers. When eggs are selling at fifty cents a dozen the parcel post offers an avenue of communication. For special trade with special customers it always will.

But the freight car is the carriage for the bulk of the trade, and must always be.

The cities should be organized on the car-lot basis. They should be organized on a year-after-year basis. They should be organized on a whole-crop basis. The waste in distribution is mainly in the cities. They must cure it.

When they do this the farmers will have a satisfactory market to supply, and to meet that demand the farmers will organize much more generally than has yet been done.

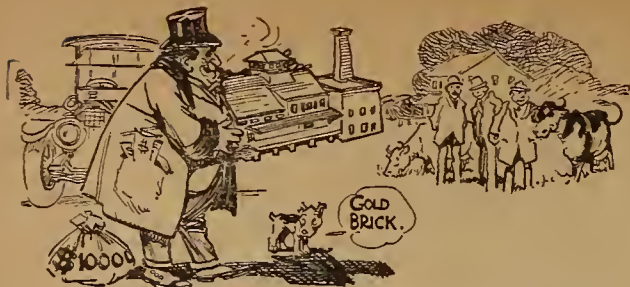
The General Hired Man

THE county farm demonstrator of Merrick County, Nebraska, in ten months traveled 9,040 miles answering calls for work for farmers. He visited 543 farms, had 478 callers at his office on Saturdays, had 2,000 telephone talks, received 200 letters from his employers the farmers, wrote them 800 letters, and was active in 20 meetings, at which 2,000 farmers met. In addition to a great many field demonstrations held by him, he vaccinated over 2,000 hogs estimated to be worth \$17,000, among which there was a loss of less than three per cent. by cholera. He detected forty "boarder" cows, and the farmers weeded them out. "County advisor," "county agent," "county demonstrator," and the like are more or less misleading or repellent terms. If we called each of these gentlemen "the general hired man" it would be nearer the truth, and make for better feeling toward a very useful functionary.

Hogs as a Pest

THE hog in pen or pasture is a good thing, and the sheet anchor of the ship on many farms; but in some regions hogs run wild and become practically worthless. They lose most of their valuable qualities and develop into pests. Suppose every village family should keep one or two worthless hogs, and a majority of farmers did the same thing. Suppose these hogs roamed the surrounding country eating chickens and destroying crops. We should all arise in our wrath and force the shutting up and the slaughter of these razorbacks. And if occasionally a boy had a pet pig or an educated hog, we'd not allow his affection for it to stand in the way of sternly repressive measures.

Because we are used to the pest of uncared-for and worthless dogs we are slow to act against them. But there are almost half as many dogs in this country as people. Nine out of ten of them are worthless, untamed, lawless. Why not treat the razorback dog as we should treat the razorback hog? The sheep industry awaits the answer to this query.



Some premature creameries are sold like this—

The White Whirlpool

By D. S. Burch, Associate Editor

Illustrations by J. Norman Lynd



—and closed like this

5. The Producer Ultimately Pays For All the Waste in the Dairy Business

In the preceding articles of this series the dairy industry has been compared to a business firm called "Milk Producer & Co." The farmer is of course one of the partners, but various other interests have also forced themselves into the firm.

A number of these intruders—the educator, scientists, inspectors, legislator, and milk dealer—have already been examined. Their usefulness and their demerits have been pointed out for the benefit of the producer.

NEARLY every member of the firm Milk Producer & Co. uses large quantities of dairy supplies. The list of things needed fills large catalogues and includes a great variety of articles ranging from huge refrigerating machines down to milk-bottle caps.

Dairy supplies wear out quickly. Tinware rusts; glassware breaks. Such things as butter cartons and parchment paper are used but once, and therefore vast supplies are needed. The household kleptomaniac assists in the disappearance of milk bottles. The cook, for instance, is making marmalade but has nothing within arm's reach in which to put it except a milk bottle. It is 11 A. M. She has the afternoon off and so must finish her work quickly. Being busy, she cannot take time to go to the pantry for a fruit jar. She fills the milk bottle with marmalade, and putting it on the shelf where it will stay for six months, perhaps, concludes, "The milkman is rich; I should worry." Some cooks could have filled a dozen or more milk bottles while I have been telling this story. One widow was found using a milk bottle to hold the ashes of her cremated husband.

A single dealer in Boston lost 31,000 bottles in a month. Now the largest Boston dealers maintain a milk-package exchange which has an agreement with the managers of the city dumps for the return of bottles. Over a thousand bottles a day are thus recovered.

The Supply Dealer is Perennially Active

An enterprising drayman in Brooklyn, New York, makes a profitable business of collecting stray milk cans, three trucks being required to do the work. The loss to the creamery business of the country occasioned by stolen, rusted, and broken cans is also heavy. One large creamery in the Middle West buys a thousand new cans every year, which, at \$1.90 a can, is a big expense to the creamery though a profitable business for the supply dealer. The breakage of glassware used in testing milk and cream is another loss, for the test bottles cost about twenty cents apiece, and thousands are broken every year, particularly by cream-station operators and their helpers. Laws and rulings specifying the use of certain apparatus also mean money in the pockets of supply men. In North Dakota a law was passed compelling the use of an 18-gram cream sample, which of course demanded a so-called 18-gram bottle. All the 9-gram bottles which had been in use therefore became obsolete. After the law was passed, a new style of 9-gram cream bottle was invented which gave better results than the 18-gram bottles in use, and in addition saved nine grams of cream every time a test was made. The authorities then regretted the 18-gram provision in the law and took steps for its repeal.

In brief, the scientists and legislators fumble around, and the supply dealers get a profit every time they have a chance to sell a different kind of article. Changing laws mean a harvest for them, and they usually reap a good crop. The dealers in dairy supplies have for years been the dominating power in directing the management of the National Dairy Show, for their money practically supports and runs it.

Much of the out-of-date machinery is sold to beginners in the business. Some years ago when the hand separator killed the business for creamery separators and equipment for handling skim milk, energetic salesmen went out to Montana, promoted fifty creamery companies, and sold them this useless equipment. Of course it was commercially worthless and a burden on their hands.

Some supply firms make a business of inducing prosperous communities to build a creamery, and of course sell them all the equipment. The promoted creamery is usually the offspring of clever salesmanship and temporary local enthusiasm, but too frequently it is short-lived because there isn't enough business to warrant its existence, or because novices, unfamiliar with creamery management, try to run it.

The managers of a splendid new creamery in Hickory, North Carolina, by using good judgment, purchased \$6,000 worth of machinery for \$1,000 by simply taking the trouble to find a creamery company that had been "soaked" and taking off its hands what machinery they could use. The producer ultimately pays for all the waste in the dairy business.

The ignorance and credulity of the consumer is sometimes preyed upon by supply dealers in a pseudo-scientific manner. For example, the public knows in a general way that alcoholic beverages keep best in brown bottles. The milk dealer and supply dealer both know that old buttermilk wheys off readily when bottled and allowed to stand. So to conceal the wheying off of buttermilk which would be evident in transparent bottles, they put it in brown bottles and tell the consumer to shake it well before pouring it out. The consumer therefore gets a nice smooth buttermilk and secretly acknowledges that the dealer is a fine fellow for taking the trouble to buy special bottles so his buttermilk will keep so well and be so nice and smooth.

Public Servants That Don't Serve

"Why do not the scientists and educators tell the people about these things?" you ask. The answer is that they do not choose to tell, and nobody has compelled them to. The average scientist or educator does not want to commit himself in a way which would get him into a controversy with supply dealers. For example, here is some correspondence in which information concerning separators is asked for, a most important matter when we consider how much money is thrown away on cheaply constructed and short-lived separators.

This example seems to show that the "lid" is on official data that have to do with dairy supplies and the buyer can get but little protection or satisfaction.

Yellow Springs, Ohio, October 31, 1913.

THE U. S. DEPARTMENT OF AGRICULTURE,
Washington, D. C.

Please tell me at once what is the best make of cream separator. I have eight cows and expect to sell cream to a creamery. Also tell me what are the poorest separators on the market.

Here is the reply:

Your inquiry of October thirty-first is received. This Department has not conducted any investigations regarding the efficiency of the various cream separators on the market, and we can, therefore, not state which is the best nor which is the poorest. I suggest that you correspond with the manufacturers of cream separators and secure cuts of their machines as well as prices, and you will then, no doubt, be in a position to choose a machine that will give you satisfactory results. Yours very truly, T. C.

Acting in Charge of Dairy Manufacturing Investigations.

We do not give the full signature because it would be unfair to single out any one individual in a matter of such general scope.

Mr. C—first says that the dairy scientists in the Department of Agriculture who work among these machines cannot state which is the best or poorest separator, and then suggests that the inquirer can no doubt choose by looking at the pictures and prices of the machines. The person looking for information not only wastes his time and his stamp and fails to receive protection, but is referred by government endorsement to the arena where all the separator concerns are fighting for business.

The Common Carrier and His Rates

The problem of officially endorsing manufactured products is, we realize, a delicate one. On the other hand, the man who buys ought to receive consideration as well as the manufacturer who sells. The firm of Milk Producer & Co. certainly needs a supply dealer to look after the wants of its partners. But the other partners need wisdom and good judgment in patronizing him. We believe that a reasonably high standard of efficiency for cream separators should be established by the Government, and any person wanting to know what separators come up to that standard should be entitled to the information.

The next partner to be considered is the common carrier. Like the milk dealer he is strictly a business man, and though he devotes only part of his energies to the milk business he is an indispensable member of the firm.

His task is to carry dairy products from an area of production into one of consumption. Kansas, for example, produces three times as much butter as it consumes, while Florida produces only a tenth enough butter to supply its needs; so the common carrier levels off the hump of excess production into the hollow of low production. He figures his rates so as to be sure of a profit, and only the legislator has been able to restrain him from overvaluing his services. His chief fault is indifference to the interests of others, and his indifference causes waste. The rough handling of cans, especially empty cans, is one of his most glaring offenses. He is also guilty of such things as putting coops of live chickens on top of cans of cream, and sometimes letting milk sour through failure to ice it. Twenty per cent. of all the milk condemned in Seattle, Washington, last year was bad owing to high temperatures, and the railroads were responsible for half of this loss.

A talkative brakeman on a New England passenger train took great delight last summer in relating to me his experience in "braking" on a milk train running into Boston. He gleefully expressed his preference for a milk train because he could drink plenty of nice milk and cream. Whether the carrier is a railroad, trolley line, or navigation company, they all employ a class of help which is not particularly interested in the welfare of the milk business. These abuses, while economically trivial, show a tendency among common carriers to regard milk as mere baggage or express instead of something to be eaten by a trusting public. The best way to correct bad transportation conditions is through competent milk inspectors who have previously been employed by common carriers and who know the conditions of service and habits of the men.

Railroad rates sometimes determine whether the dairy business shall exist in certain areas. The centralized creamery business depends for its existence on low rates for cream. In fact, before that business started, its originators first went to the railroads and pointed out that if low cream rates were put into effect farmers would have more cash to spend for other things, and that would mean more freight and hence more profit for the railroads. The cream would also be a high class of freight in which a nice business could be built up.

Low rates were therefore granted, and the centralizers began to build up their business. In a few years cream shipments became so large that the railroads were losing money on the cream-hauling business. The rates were lower than the cost of the service.

Motor Trucks for Wholesale Deliveries

The loading and unloading of cans took so much time that the mail trains could not keep their schedules and the railroads were obliged to pay fines to the Post Office Department for delayed service. The railroads then attempted to raise their rates. But the centralizers objected, claiming that they were making less than half a cent profit to the pound of butter, and that an increase in rates would kill their business. [CONTINUED ON PAGE 18]



Some milk bottles disappear like this—



—After use like this



Still others meet a fate of this sort

In brief, cream and milk rates have a great deal to do with the location and extent of the dairy business. Transportation companies and rate commissions will in the future probably be more important factors in dairying than in the past. The supply dealers have been of great service to dairying, but a certain class of them has also been a burden to dairymen who have not yet learned the truth of the proverb, "Let the buyer beware"

Alfalfa-Growing by Master Hands

A Fact Story of Three Brothers Who Market Much of Their Alfalfa Through Sheep

By Trell W. Yocum

TRADITIONS tell us that the ancient Greeks often attained honor and fame, not by any effort of their own but through the will of some kind god. This belief, in various forms, has been handed down through ages, and even in our modern times, when one is successful in an enterprise, the gossipers, who at the outset predicted utter failure, sadly wag their knowing heads and murmur "luck."

Such an appellation has been often applied to the work accomplished by the Wing brothers on the famous Woodland Farm in central Ohio. However, in this case, as in all other cases, "luck" is a misnomer. These sturdy brothers, Joe, Willis, and Charles, have considered farming in a new light; they have considered it as a modern business.

Their little god of luck has been nothing more than grit and perseverance personified. They have had faith in alfalfa, and through tireless experiments have succeeded in demonstrating its priceless worth. They have not been selfish. What they have learned has been passed on to others. To-day the work of these unassuming men is recognized everywhere. Few know of their trials in those dark days twenty years ago. Their belief in alfalfa was not shaken by neighbors and friends who, though well meaning enough, said that they were "crazy tryin' to carry out their fool notions." As one now drives past Woodland Farm and sees the great fields of luxuriant green alfalfa and the fifteen hundred sheep, he little thinks of the first small patch of alfalfa or of the meager flock of lambs that were on the place when the Wing brothers first started their experiments. Sufficient for us is it to know that they have succeeded. Joseph E. Wing now travels over the country speaking and writing about alfalfa, while Willis O. Wing devotes his time largely to managing the farm. Charles Wing is interested in the seed industry and farms his portion of land separately.

All Kinds of Soil

The soil on the 340 acres of Woodland Farm varies from a black peaty loam to a heavy red clay. It is underlaid with gravel; and limestone can be found jutting out here and there on the surface. A system of tile thoroughly drains the land. The roots of the alfalfa have never interfered with the tile drainage. The only instance when alfalfa roots have clogged a drain is where spring water runs in it the year around. In such a case it is advisable to place on top of the tile excelsior or sawdust soaked in creosote before filling in the dirt. The farm is devoted almost wholly to the production of mutton. Lambs are bought in the fall, and

fattened through the winter on alfalfa and corn. Fifteen hundred are fed, and a gain of fifty pounds is usually put on per head. Thus about seventy-five thousand pounds of mutton are sold yearly. No commercial nitrogen is purchased, as an ample supply is furnished by the nitrifying bacteria on the alfalfa roots. Phosphorus is used liberally, however, since much is sold in the flesh, blood, and bones of the sheep. Various carriers of phosphorus, such as acid phosphate, basic slag, and raw bone meal, have been used, the two former giving the better results. Raw rock phosphate has been used as a top dressing, and also in contact with manure, but no beneficial results were observed.

What Kind of Phosphorus to Use

Willis Wing recently remarked to me, "Raw rock phosphate may be correct theoretically, but in practical work it has never given us results. The analysis of hickory sawdust shows that it runs higher than corn silage in protein, but what results will it give as a feed stuff? What we are after is immediate and positive results." Usually the phosphorus fertilizer is sowed with the alfalfa seed, a sufficient quantity being used to last three or four years. If a smaller amount is used a top dressing is given the second or third year directly after the first cutting. As to the better carrier of phosphorus, basic slag or

under during the fall. In the spring, if there are many clods remaining, the field is disked. Then the harrow and drag are used to make the seed bed fairly fine and smooth. About the 20th of April the drill is brought on the field; fifteen to twenty pounds of alfalfa seed, three pecks of beardless spring barley and four hundred to five hundred pounds of 16 per cent. phosphate fertilizer are sowed per acre.

For the Corn-Belt States east of the Mississippi River the Wing brothers advise spring seeding of alfalfa with a nurse crop, as it keeps back the weeds until the alfalfa has a good start. In States other than those referred to, summer seeding has proven more satisfactory. After the seed is in, the land should be floated with a smooth plank drag. In following the above methods they have never failed to obtain a good stand. Of course limestone and the nitrifying bacteria are present in the soil. A few low spots of black peaty soil deficient in potash are treated every three or four years with two hundred pounds of muriate of potash. These spots when untreated will not produce hardy corn or alfalfa plants.

Many people wait until the alfalfa is in full bloom before cutting. The better plan, followed on Woodland Farm, is to watch for the new shoots at the base of the alfalfa crowns. When these appear it is mowed immediately. The hay when put in the mow is in a fairly succulent condition. If allowed to dry too long in the field the leaves shatter and are lost. Two open-center bales, with a combined capacity of almost two hundred and seventy-five tons, are filled and the overflow goes into the horse barn and stables. The alfalfa is cut three times each season; never more because of the increased possibility of the plants winter-killing. The three cuttings give a total of about four tons per acre annually.

Methods That Win

Sometimes grasses will come into alfalfa meadows and choke the alfalfa. To remove these grasses and not harm the alfalfa they have used with a fair degree of success the disk and spike-toothed harrow, but each has its disadvantage. Then came the alfalfa harrow to solve the problem. It is similar to the spring-toothed harrow except that the teeth are made narrower and much sharper. As soon as the first crop is taken off, this harrow is used in several directions. The points of the teeth slip easily around the alfalfa crown but gouge out the most troublesome grasses. The alfalfa obtains a mulch and is freed from weeds.

These men, common, modest farmers, love their work and as a result they are accomplishing much.



From this one farm about 75,000 pounds of mutton are annually sold

acid phosphate, there is little choice, but on land deficient in limestone the former would be better.

A six-year rotation is used on Woodland Farm: corn on alfalfa sod for two years, barley as a nurse crop for alfalfa one year, and alfalfa for three years.

Manure from the sheep barn is hauled on the stubble of the cornfield the second year, and is plowed

A New Englander's Experience with Alfalfa

By David Buffum

WE VERY often hear it said that it is of no use to try to grow alfalfa in New England. Since we have a well-established field of alfalfa on our New England farm I am in a position to dispute this statement, though the difficulties in New England do seem to be greater than in many sections, and we ourselves did not succeed at first. And so I think a short account of our experience may prove helpful not only to other New Englanders but to all who desire to grow alfalfa in an unaccustomed and apparently unwilling soil.

We began our preparations for liming by testing the soil for acidity with litmus paper. This disclosed some acidity on some portions of the land; on others, none. To appearances a light dressing of lime would suffice.

In the autumn we applied to the soil to be planted a heavy coat of stable manure. The following May we plowed it and applied lime at the rate of about one hundred pounds per acre and sowed our seed. We made no attempt to inoculate the land, as no soil for the purpose was available. Nevertheless the seed caught splendidly, and the plants made so vigorous a growth that we mowed the field that same season, getting a very fair crop.

The Litmus Test Had Failed Us

The following season, however, the puny aspect of the plants and their sickly yellowish color showed our experiment to be a failure. The roots, on examination, showed no nodules, clearly proving a lack of inoculation, and we began also to suspect that we had applied too little lime. Accordingly we again plowed up the whole field, applied lime at the rate of five hundred pounds per acre and treated the seed with an artificial culture for inoculation. The resulting crop was "patchy." Where the inoculation had taken hold the plants were very vigorous; those in the intervening spaces were discouragingly feeble.

The result of our efforts thus far was certainly not very flattering. But there seemed no reason why alfalfa should not grow in New England; and we had gained at least one point, the inoculation of portions of the field. So the following season, with a view to

spreading the inoculation, we again, for the third time, plowed up and reseeded the whole field. This time, however, we divided it in the middle and on one half of it applied additional lime at the rate of two thousand pounds to the acre!

The result was an even inoculation of the whole field; we had gained soil inoculation at last. Our experiment in liming also threw a flood of light upon that part of the operation, for on the part of the field where we applied the additional lime the plants were far more vigorous and thrifty. It will be noted that on this portion the lime, in all, amounted to twenty-six hundred pounds per acre, while on the remainder it amounted to only six hundred pounds per acre.

Get Rid of the Quack

MR. BUFFUM says that quack grass bothered him in his attempt to get a good stand of alfalfa. He tells how difficult it is to eradicate. But it can be conquered. For the colder climates, at least, this method will succeed:

1. Put the disk on the field immediately after haying and keep it there until cold weather sets in.
2. Then plow deeply, say eight to ten inches.
3. Let the field take care of itself during the winter.
4. In the spring get on the land as soon as possible with the disk and keep the disk busy on the affected piece until time to put in a late, cultivated crop, such as corn or potatoes.
5. Put in the crop and keep it cultivated—let no grass start.

The quack grass will have been killed by this time. But as a safeguard plant the field another year to a cultivated crop. Then the field will be ready for alfalfa.

EDITOR.

But had we now succeeded in getting a really good field of alfalfa? By no means; for meanwhile one of the bitterest of enemies to alfalfa had gotten in its fine work. This was dog grass, known in some parts of the country as quack grass, and probably by some other names. There were a few small patches of it in the field when we began, and the repeated plowings had spread it all over the field.

Two Hay Crops and Fall Pasturage Each Year

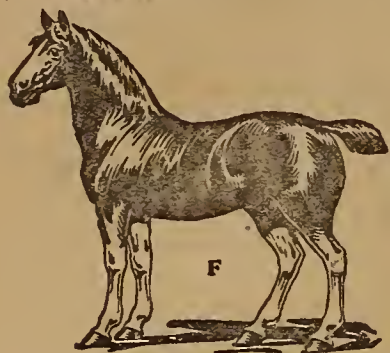
The lessons taught by these three trials seemed to point the way very clearly to success. So the following season we plowed up a new piece of ground which lay right alongside of the first and which, the previous year, had been liberally dressed with stable manure. This we treated with lime at the rate of three thousand pounds to the acre, inoculated it with soil from the first field (being exceedingly careful to get none of the villainous dog-grass roots), and sowed our seed. The result was a most gratifying success. On this field, from the first, the stand of alfalfa has been even and vigorous.

It is wonderful stuff, this alfalfa, giving us two crops a year, growing green and vigorous right through the droughts that spoil or abbreviate the hay crop, and making the soil richer instead of poorer as it grows. To the New Englander, accustomed to annual dressings to keep his land in crop-bearing condition, it is nothing less than a godsend and worth all the effort that may be necessary to get it established. And yet, with a clear understanding of essential points in the first place, I believe that the end is not hard to attain. First, remember that you must lime heavily—two thousand to four thousand pounds per acre, and more will do no harm. Then inoculate from a well-established field if you possibly can; if not, treat the seed with an artificially prepared culture. And remember that if your ground gets dog-grassy, the result of your efforts, even if successful in other points, will be greatly minimized. Therefore, if there is any dog grass in your land, avoid repeated plowings, and when you come to a patch of it let your plow run out of the ground and slide over it.

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Humane Methods of Starting Balky Horses

The contributions appearing on this page are the prize-winners in the contest that closed December 25, 1913. First prize of \$3 has been awarded to "Cramped-Muscle Treatment," by John Y. Beaty, and second prize of \$2 to "The Whirling Method," by C. F. Mowrer. All others printed win \$1 each. Acknowledgment is also made of the many contributions which could not be published.

A Humane Seesaw Treatment

BEFORE taking a balky horse out on the road, fasten two small rings to the bottom of the collar. Now take a heavy cord or a very thin rope, put it through one ring, then around in back of both forelegs and then through the other ring.

Take the ends of the rope back to the driver's seat. As soon as the horse balks draw the rope tightly, and slowly saw it back and forth. It will not injure the animal at all, but will produce hot spots on the muscles of the forelegs. To free itself from the annoying heat the horse will move one leg forward. Repeat the sawing movement until another step is taken. In a short time the horse will be going well. This is the method used by professional horse-trainers for curing balkiness.

G. JOHN MOREAN.

String-on-the-Ear Method

IS THERE a really humane method by which a balky horse can be started? I mean if he is "honestly" balky and regularly set in his ways? Here is a method, but it is not altogether humane; however, I doubt if it hurts the animal very much, and it certainly is effective.

If the horse informs you by his actions that he will not attempt to pull his part of the load, just be calm about it and get out of your rig as if nothing were the matter and tie him to a tree or fence or anything handy. Then take a stout string (if necessary a piece of your shoe-string) and tie it tightly around the animal's ear, about an inch and a half from the tip.

Get back in, but be careful he does not start before you do get in, and hold him well afterwards, because you will not find it necessary to cluck or whip as long as the string remains tight. When the necessity for hurry has gone, take the string off until the next stop. A few applications of this kind will break any but the worst cases. BURTON BUNCH.

Pulling with the Tail

HAVING had three balky horses at different times and experiencing no difficulty in starting them, I will relate my method. All I did was to tie the balker's tail to the singletree and say, "Get up." In all cases the balky horse was one of a double team. The opposite horse would start, and that would pull on the balker's tail. The balker never failed to start.

I had one seven-year-old mare that wouldn't pull the hat off your head, and she had been tried every way before I bought her. I hitched her up in the morning and by noon had her pulling her share of a four-horse disk. I first let her pull it all with her tail, then began to loosen up each round a little until she was pulling all with the collar.

It is best to start them with their tails a few times, but not to overdo it. By being balkers they are soft like a colt. A horse can pull a light load with its tail as well as with the collar without injury.

JOE WHITE.

A Cramped-Muscle Treatment

THE other day I saw a man stalled on the street-car track with a balky horse. He did everything he could think of to make the horse move, but to no avail. The policemen tried to push the horse, and they tried to pull him, but he wouldn't budge an inch.

Finally a young man came up and took in the situation at a glance. He spoke to the policeman, who, at their wits' end, were glad to have him try his plan. He spoke to the driver and told him to sit quietly in his seat with whip ready until he gave the word of command. His instructions were that the horse should be touched up with the whip when he said "Go."

He asked the policeman to clear the crowd away to allow plenty of room and to get the horse in a better frame of mind. When all was ready he stepped quietly to the horse's side, stroked his neck, patted his nose and spoke to him quietly. Finally he reached for the fetlock on one of his front feet and quickly lifted the foot from the ground. He doubled it up against the horse's forearm and held it there tightly for about a minute. Then he told the driver to be ready, said "Go," and dropped the foot.

The plan worked like magic. The horse stepped off and the tap from the driver's whip kept him going. There was no sign of balking.

The man who had made the horse go afterward explained that the foot becomes rather numb when held in the unusual position for a short time, and when the horse puts his weight on it, it surprises him so that he forgets his balky streak and puts his other foot forward to catch himself. This gets him started, and with his mind on his numb foot he steps off as usual.

JOHN Y. BEATY.

The Whirling Method

GENERALLY, if the horse is not confirmed and too set in his way, one may get him to start by simply picking up one of his feet, tapping on it, or act as though picking something out of frog. But if the horse has been in the habit long, and will not proceed after trying the above, unhitch him, tie halter rope to his tail, drawing his head well around, give him a little shove on the rump, when he will turn around and around. Have the knot in such a manner that you can easily release it. After he has become dizzy take him quickly back to the rig, hitch him up, and almost invariably he will move on. If not, give him another treatment.

Prevention though, like in everything else, is better and more humane than a cure. If we use judgment in working a horse there is hardly any excuse for producing one that is balky.

C. F. MOWRER.

Tap the Foot

THE most humane method for starting a balky horse that I know of is to take with you every time you drive a horse that is likely to balk, a small shoeing hammer. No, it is not to beat him with; but when he stops and refuses to go just take your hammer and get out of the wagon. After petting him a little, raise one of his fore feet and tap sharply on the shoe if the horse is shod.

If not, tap on the hoof for a minute or two. If you do not happen to have a hammer with you, a smooth stone will answer the purpose. Now take the reins and you will be surprised to see him start right off as if nothing had ever happened. This is easy to try and may save some poor horse a beating.

HARRY W. BURGESS.

Slow Starter Causes Balkiness

IONCE owned a balky mare which I could pull as much as anything of her size if she would. The way I broke her of her habit of balking was by first learning the cause of her not wanting to pull.

The reason was that she did not want to start the whole load. If the other horse started when she did I had no trouble, but as the other horse was slow in starting the mare had developed the habit of balking. Now I always speak to the other horse by name so that he will start promptly. I think more balky horses are taught balkiness by a slow starter than by anything else.

Never whip or yell at a balky horse, just study its disposition and treat it accordingly. Horses that have been broken singly and never worked in a team scarcely ever balk according to my experience.

E. TIDBALL.

A Three-Legged Rest

WHEN a horse is determined to "rest," do not whip or scold him but with a strap or rope tie up one of his front feet. Fasten the strap to the lame, or carry it over the withers, and fasten to the opposite hame ring so the horse will be compelled to stand on three legs. The "resting" soon becomes more uncomfortable than going.

Do not, however, let the foot down on the first inclination of the horse to move, but hold it until the horse becomes very anxious to go. In all cases avoid crowds if possible, for they annoy a balky horse. The humming of a little cheerful song or the low whistling of a lively tune helps to remove the incidental nervousness and the excitement of both horse and man.

JAMES R. CLARK.

Blindfold the Balker

AMAN was hauling a heavy load of wood up a steep hill. He had nearly reached the top when one of his horses balked. The man tried to lead the horse along, but it would not go. He unhitched it and gave it a severe lashing with his whip.

He then hitched the horse up again, but it would not pull. He whipped it some more and again tried to lead the horse, but it would not go that way either. He was very angry by this time, and again unhitched the horse and began to whip it.

An old lady who had been watching the performance came down the hill to where this man was whipping his horse. She told him to stop beating the horse and to hitch up again, which he did. The old lady walked up to the horse's head and patted him. She then took off her apron and put it over the horse's head. She patted the horse again and took hold of its bridle. Then she told the man to take the reins and drive. The horse began to pull at once and the load was soon up the hill. This horse received an unnecessary beating.

EDWIN AUF DER HEIDE, JR.

Tie up the Balker

ABOUT a year ago I purchased a pretty a driving horse as I ever looked at. On my second attempt to drive her she balked, and no amount of urging or coaxing would make her go. After she had stood as long as she wanted to she suddenly started of her own accord. The next day I put two good ropes in the wagon and drove out the same road. At the same little pitch the horse stopped.

I tied her front feet together, and also her hind feet, so that she could not step. Then, unhitching her, I backed the buggy. After making two or three attempts to go and finding herself fast, she threw herself. Then I tied her up so she could not get up. I kept her down about two hours, then hitched up and drove home. She has never balked since. I carried my ropes with me for a long time, but never had to use them again.

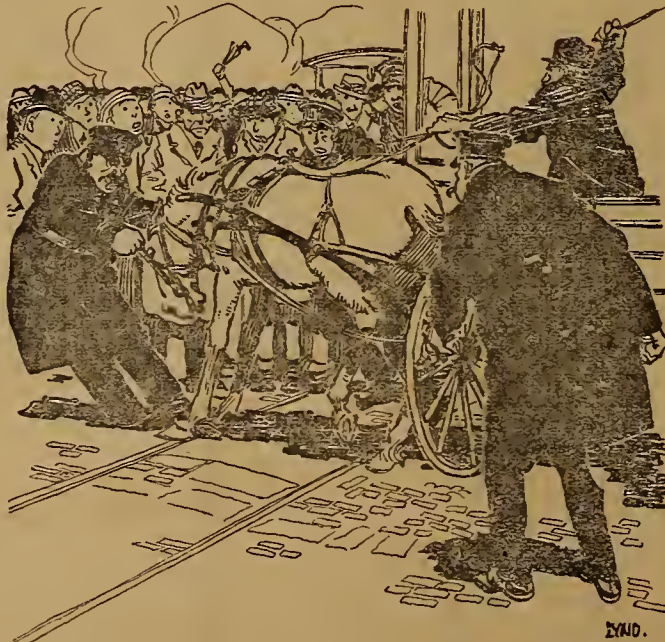
W. P. NUSOM.

Reverse the Pull

WHEN one is on a bad muddy road with a heavy load and one horse balks, halfway up the hill, the situation is anything but pleasant. If you cannot back out take the team off and hitch to the back end of the wagon. Pull it down hill about the length of the wagon. By so doing the balky horse is convinced that he can pull the load, and the wagon is also pulled out of the chuck holes. Then hitch the team on the front again, and nine times out of ten the horses will take the load on without further difficulty.

You can prevent balking by watching your horses. A horse that is going to balk will turn his head around and look at you, or will throw his head up and down and then finally stop. As soon as a horse begins to throw his head or look around, say "Whoa." In other words, make your horse start and stop according to your orders instead of allowing him to stop of his own accord.

After you have given the horse a good rest, say, "Get up," and he will do his best pulling. If the hill is long give your horses frequent rests. The average horse will seldom balk if shown consideration and allowed to rest when tired. EDGAR L. WARNER.



They tried to pull him, but he wouldn't budge

Stop! Look! Read!



New World's Champion.
Greatest Jersey Ever Lived

Sensational Record of Sophie 19th

For the year ending
January 20, 1914.

Milk—17,557 lbs. 12 ozs.
Butter—1,175 lbs. 7 ozs.
Butter Fat—995 lbs. 12 ozs.

Total Record for Five Years

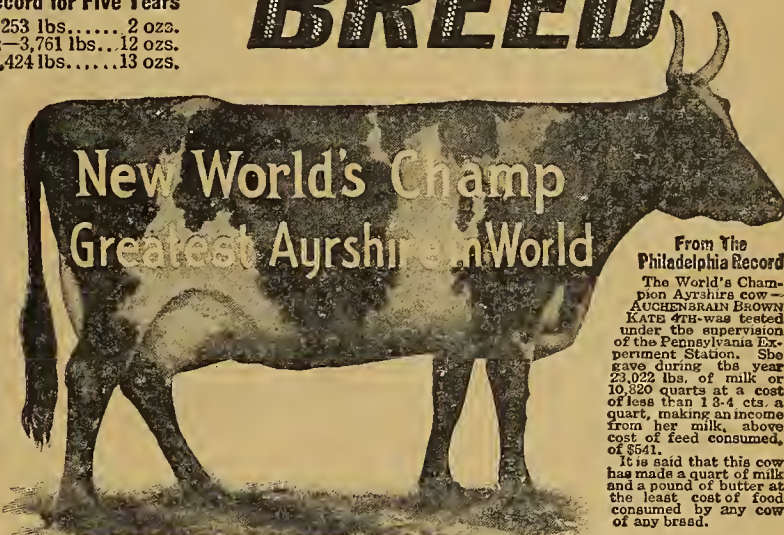
Milk—64,253 lbs. 2 ozs.
Butter Fat—3,761 lbs. 12 ozs.
Butter—4,424 lbs. 13 ozs.

Hood Farm, Lowell, Mass.
January 22, 1914.
The Quaker Oats Co., Chicago, Ill.

Gentlemen:—It will probably interest you to know that we have been feeding **Schumacher Stock Feed** to Sophie 19th, of Hood Farm, 189748. She finished her last record January 20, 1914, which makes her the Champion Jersey Cow of the world, and stamps her the greatest dairy cow living or dead. We consider **Schumacher Stock Feed** a splendid feed for dairy cows, and a strong factor in increasing the milk and butter production. Very truly yours,
Hood Farm, per J. E. Dodge, Mgr.

FEED PROVES

Greater Than BREED



New World's Champ
Greatest Ayrshire in World

From The Philadelphia Record

The World's Champion Ayrshire cow—**AUCHENBRAIN BROWN KATE 4TH**—was tested under the supervision of the Pennsylvania Experiment Station. She gave during the year 23,022 lbs. of milk or 10,320 quarts at a cost of less than 13¢ a quart, making an income from her milk, above cost of feed consumed, of \$541. It is said that this cow has made a quart of milk and a pound of butter at the least cost of food consumed by any cow of any breed.

World's Records Smashed Again! Many Breeds—BUT—All Fed One Feed!

Again and again, during the past year, the world has been astonished at the marvelous productions of milk and butter from single cows. Think of getting over $8\frac{3}{4}$ tons of milk and over $\frac{1}{2}$ ton of butter from one cow in one year.

First one breed, then another, and still another have smashed all previous world's records, until in amazement we ask, "Is it possible," and "how can it be done?"

The answer no longer is "getting the right breed." Instead, "it's getting the right feed" and the right individual. Feed has proved greater than breed! This is conclusively proved by the fact, that regardless of the breed of these "Queens of the Dairy World"—be it Jersey, Holstein, or Ayrshire, which have "beaten" all records to date—they were all fed the same feed—the world famous, record-making, record-breaking—

Schumacher Feed

Therefore, we proudly—justly—proclaim that "Feed—SCHUMACHER FEED—proves greater than breed." Read the wonderful world's records just achieved by Sophie 19th of the Hood Jersey Farm, who finished her yearly test Jan. 20, 1914. Then read what Auchenbrain Brown Kate 4th, Queen of the Ayrshires accomplished—the cow which has the distinction of producing more milk and butter at least cost of any cow in the world. Then read the record of the first cow in the world to produce 40 pounds of butter in a week—Valdessa Scott 2nd. Then read the record of the second 40 lb. cow and note that all these remarkable, sensational performances were made with **SCHUMACHER FEED** as a base of their rations. Read their owners' letters. It needs no further evidence to convince anyone that **SCHUMACHER FEED** is the "best in the world." If it is "best" for the "best cows in the world" it certainly is best for your cows.

Try This Record-Breaking Feeding Plan

—a plan used by the World's Record makers, and you will be surprised at the results: Mix three parts **SCHUMACHER** with one part of any good high protein concentrate you are now feeding, such as Gluten, Cottonseed Meal, Distillers' Grains, Oil Meal, Malt Sprouts or Blue Ribbon Dairy Feed. Your cows will not only show a splendid increase in flow but in due time will show a splendid improvement in health, vigor and appearance. **SCHUMACHER** furnishes that stamina—vitality—ability—to stand up under heavy milk production, so necessary in profit-producing dairy cows.

FREE FEEDING FACTS If interested, write us for "Feeding Facts" and get some information worth hundreds of dollars to any dairyman or farmer.

THE QUAKER OATS COMPANY,

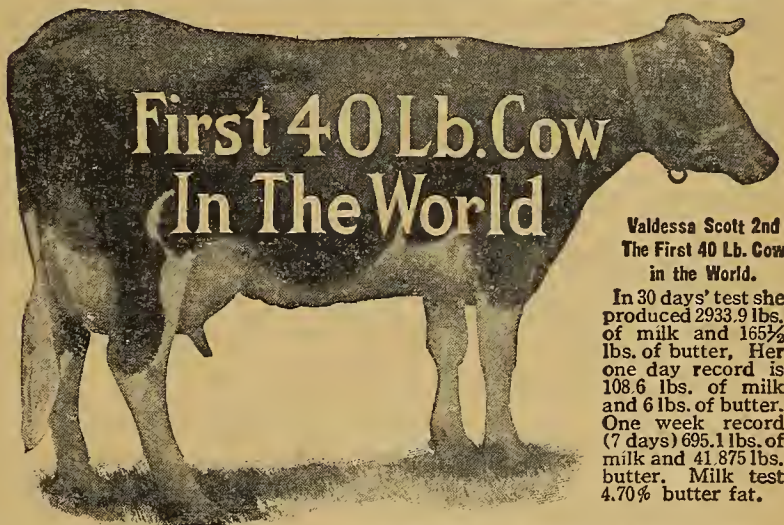
Dept. 20

CHICAGO, U. S. A.

[25]

If your
dealer does not
sell **SCHUMACHER**
write us.

Narberth, Pa., December 6, 1913
The Quaker Oats Company, Chicago, Ill.,
Gentlemen:—We have been feeding your **Schumacher Stock Feed** to our Ayrshire and Jersey cows which are on test for Official Records, and like it mixed with other grains. Our World's Champion Ayrshire Cow, **AUCHENBRAIN BROWN KATE 4TH**, who has just finished her year's work with a record of 23,022 lbs. milk and 1080 lbs. of butter, was fed **Schumacher Stock Feed** as part of her ration. We find that **Schumacher Stock Feed** is one of the best feeds we have ever used in our mixtures. Yours very truly,
(Signed) E. S. Deubler, Superintendent, **PENSHURST FARM**.

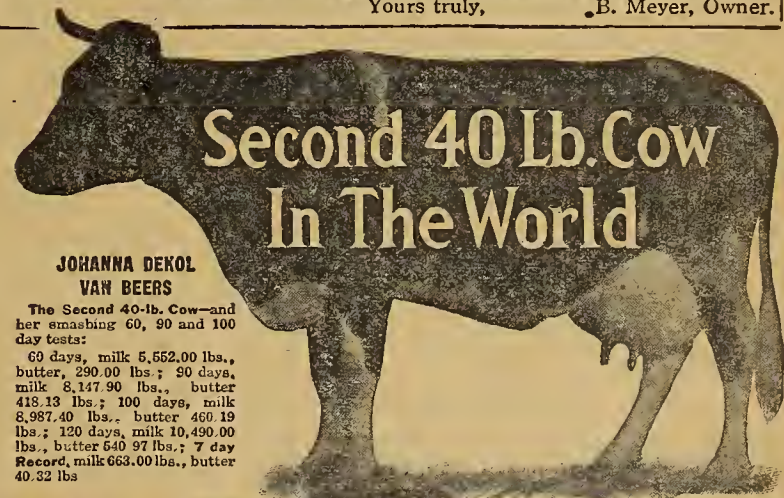


First 40 Lb. Cow
In The World

Valdessa Scott 2nd
The First 40 Lb. Cow
in the World.

In 30 days' test she produced 2933.9 lbs. of milk and 165½ lbs. of butter. Her one day record is 108.6 lbs. of milk and 6 lbs. of butter. One week record (7 days) 695.1 lbs. of milk and 41.875 lbs. butter. Milk test 4.70% butter fat.

Finderne Stock Farm, Finderne, N. J.
The Quaker Oats Co., Chicago, Ill.
Gentlemen:—During the past two or three years we have been feeding your **Schumacher Feed** and have secured splendid results. **Schumacher** was incorporated in the ration of Valdessa Scott 2nd during her wonderful result producing test. Used as a base with a good protein concentrate it is a winner. Yours truly,
B. Meyer, Owner.



Second 40 Lb. Cow
In The World

JOHANNA DEKOL
VAN BEERS

The Second 40-lb. Cow—and her smashing 60, 80 and 100 day tests:
60 days, milk 5,552.00 lbs., butter, 290.00 lbs.; 80 days, milk 8,147.90 lbs., butter 418.13 lbs.; 100 days, milk 8,987.40 lbs., butter 460.19 lbs.; 120 days, milk 10,490.00 lbs., butter 540.97 lbs.; 7 day Record, milk 663.00 lbs., butter 40.32 lbs.

Brookline Farm, Dec. 8, 1913.
The Quaker Oats Co. Chicago, Ill.

Regarding **Schumacher Stock Feed**, will say as a feed for dairy cows or young cattle, I know of no feed equal to **Schumacher**. It certainly contains all the ingredients necessary to put the finish and gloss on an animal and more than that, the results obtained through the pail makes it the cheapest feed that I have ever fed. Johanna, in fact all my cows are fed every day a ration of **Schumacher Feed**. To any one feeding cattle for show, I would especially recommend **Schumacher**. Yours truly,
T. E. Getzelman, Prop., Hampshire, Ill.

Condition Your Poultry to Get Fertile Hatching Eggs

The crying need of every poultry raiser right now is fertile eggs for hatching—on the condition of your poultry depends the fertility of your setting eggs.

So sure am I that Dr. Hess Poultry Pan-a-ce-a will invigorate and tone up your fowl, make your hens lay and increase the fertility of the eggs, I want you to cut out this advertisement and take it to my dealer in your town and he will give you a trial package absolutely free of charge; the package contains enough for 12 hens for two weeks.

Feed Dr. Hess Poultry PAN-A-CE-A

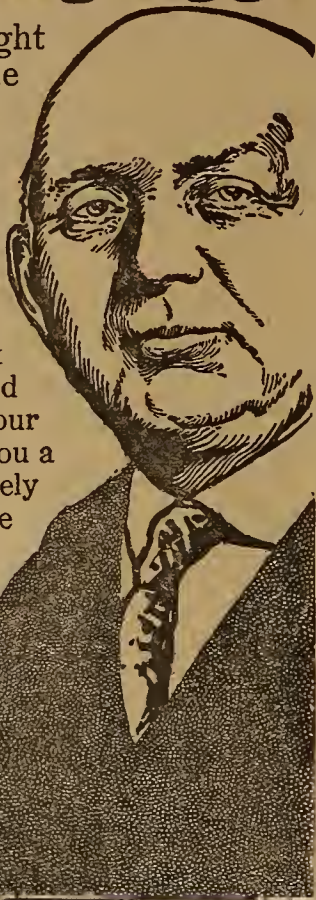
In this scientific poultry preparation I have put every ingredient that my twenty-five years' experience tells me poultry need to make them well; that a hen needs to make her lay; that chicks require to make them grow. It cures Cholera; an excellent constitutional treatment for Roup; cures Gapes, Leg Weakness, Indigestion and the like.

I absolutely guarantee that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy—will tone up the dormant egg organs and compel each hen to lay regularly—help chicks grow—get fertile eggs for hatching and shorten the moulting period.

Money-Back Guarantee I have authorized my dealer in your town to furnish you enough Pan-a-ce-a for all your poultry, and if it does not do all that I claim, return the empty packages and get your money back. Remember this, Dr. Hess Poultry Pan-a-ce-a is never sold by peddlers, but only by reliable dealers whom you know. 1 1/2 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the far West.

Don't forget to get your trial package—it's free—take this advertisement to my dealer in your town. If no dealer in your town, send us 5 cents in stamps to pay postage, give us the name and address of your dealer and we will send the trial package direct.

DR. HESS & CLARK, Ashland, Ohio



Dr. Hess Stock Tonic

Your stock need this tonic and laxative conditioner now. There's nothing better to put horses in trim for hard spring and summer work. Milch cows need it badly just now to prepare them for the heavy milking season ahead. Dr. Hess Stock Tonic makes all stock healthy—keeps them toned up and expels worms. Sold under a money-back guarantee. 25-lb. pail \$1.00; 100-lb. sack \$5; smaller packages as low as 50c. Except in Canada, the far West and the South. Send 2c for my new free Stock Tonic Book.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West. I guarantee it.

Poultry-Raising

The Hen and Her Hatching Job

By Anna Wade Gallagher

A HEN that is well cared for seldom deserts her nest. We have used both hens and incubators for hatching the chicks, but for a number of years we have hatched with hens all those intended for layers.

We select large, quiet hens to do the hatching. When a hen begins to show signs of broodiness we always try to make sure that she is really in earnest before we trust her with a nestful of good eggs. She is allowed to sit, one night at least, on a few nest eggs. By the following night we have the hen settled on a new nest.

A new nest box with fresh nest material is arranged so that when the hen is taken off the old nest at feeding time and then goes back she will go onto the new nest. After dark the nest box (her eggs and all) is carried to a building that is occupied only by sitting hens. Of course nearly all of the hens have to be moved this way because they're never allowed to remain in the houses where other hens are in the habit of laying. And it is seldom, indeed, that a hen refuses to sit. A quiet hen rarely objects to a new location if she is moved on the nest after night.

If there is any vermin about the premises some sort of exterminator should be used. Tobacco stems or leaves put in the nest boxes will help. We use shallow boxes because when deep ones are used the hens are likely to break the eggs when they stand on the edge and jump down into the nest. Then, too, the shallow nests can be easily arranged so that chicks can get back if they happen to fall out. Dry grass is used for the nests. Almost any kind of hay is better than straw or excelsior. Plenty of nest material is used, and before it is arranged a piece of sod is placed in the box large enough to nearly cover the bottom. If it does not quite cover it some of the nest material is securely packed around it so there will be no hollows for the eggs to roll into. Over the sod we arrange the dry grass into a large shallow nest, the bottom of which is nearly flat. The grass is packed as solidly as possible, more of it being used around the sides than in the center. There is no danger of the eggs getting in a bad condition in this kind of a nest.

Test the Eggs by all Means

After the eggs have been under the hen for a week or ten days they are taken out and tested. No matter whether they are hen eggs, turkey eggs, goose eggs, or duck eggs, it is all the same. Guinea eggs cannot be tested on account of the thick shells. It is next to impossible to tell anything about a brown-shelled hen's egg. All others are easy.

A dark room or house where the bright sunshine streams through a small opening is the best place we can find to test eggs. Don't throw away an egg until you are sure it is no good.

Remember, when an egg has been incubated (either naturally or artificially) for ten or eleven days and still looks clear, it is infertile. If an egg looks dark put it back into the nest; it may or may not contain a living chick.

Don't feed sitting hens with the rest of the flock, and do not feed soft food. Dry whole corn is best. Sloppy mash will cause bowel trouble in sitting hens, which is sometimes so severe that it is mistaken for cholera. We feed plenty of whole corn, and sometimes a little wheat for a change. They are also provided with plenty of sharp grit and some sort of green stuff. When it is not advisable to turn the hens out of doors pieces of green sod should be placed in the house where they can reach it. We feed the sitting hens regularly once a day, and if they refuse to eat they are gently lifted off and not permitted to go on again until they have eaten some food or, at least, taken a drink. They are never kept off for more than fifteen minutes, however.

Hoax Hen Story Run to Earth

FOR a year or two past there have been various sensational items published in the news press and some poultry papers telling of wonderful results accomplished by English experimenters who were keeping young chicks and laying hens subjected to electric light and electrically charged atmosphere.

FARM AND FIRESIDE took the story with a "grain of salt" and has succeeded in running this hoax story to earth.

Note what Mr. Edward Brown, president of the International Association of Poultry Inspectors, Westminster, London, says in reply to our letter of inquiry sent him:

"The result of my inquiry is that nothing can be said at all definitely at the present time. The fact is that some observations are being made which one of our papers got hold of, and with the usual journalistic spirit they multiply the facts if they do not

actually invent them. Nothing more can be said at present except that electric light used for laying hens does undoubtedly stimulate egg production for the time being. It is found, however, that there is loss later on. As to the chickens, we have not got that far."

It can be readily understood that some means of extending the length of the days during the early winter season might be of benefit in getting the hens to lay sooner and produce more eggs on account of the opportunity to feed later in the evening, and thus shorten up the long stretch of fasting that occurs in November and December when the hours of daylight are so few. There may be possibilities in the electric current that will be developed in the future to accelerate the hen's egg-laying machinery, but that improvement does not seem to have yet arrived.

Little vs. Big Flocks

FLOCKS of hundreds and thousands of laying hens are being kept at a good profit by about one man in a hundred who have undertaken wholesale production of eggs. The ninety-nine complete or partial failures indicate about the proportion we may continue to expect in the future. The little flock of a dozen or score or two of bred-to-lay and cared-for-to-lay hens will continue to supply the really high quality eggs for the tables of the discriminating egg-eaters of America.

Let no one believe that the "chicken" hen and small-sized incubator will be side-tracked to make way for the wholesale hatchers that usher baby chicks by thousands into an unfeeling world. The broody hen and small machine hatcher go hand in hand with the family and two-family flock, and this combination is bound to continue.



Hi Stubbs is in bad with the grocery man. Grocer sold some eggs the other day that Hi sold him six weeks before, and now he thinks Hi ought to make good because Hi said they were strictly fresh.

A Combination of Hens and Cherries

By W. H. Jenkins

IN a village of Otsego County, New York, resides T. H. Morse, a merchant tailor. Partly as a recreation and partly to supply his family with poultry products he began keeping hens. Being a good business man he began to study hens. The result was that he has realized a net profit of more than two dollars per hen. He increased his flock to 100 without reducing the net profit, and this told him that he could make it pay well to use the most of his two acres. He produces pure-bred White Leghorns. His poultry business has developed until he has at the present 1,000 laying hens.

I visited Mr. Morse's place and saw the 1,000 chicks which he raised last year. To raise these chicks he set in his incubators about two thousand eggs during March and April. I think seven incubators are used to do the hatching. These are placed in a cellar to obtain an even temperature. When the chicks are taken from the incubators they are put in the best up-to-date brooders, heated by a lamp, and give only warm water for two days. Then they are given a commercial chick food, a fine hone grit. The next feed is rolled oats cut in a meat chopper. The chicks are kept in the brooders and fed commercial foods, and skim milk when it can be obtained, until the weather is warm enough for the chicks to be comfortable without artificial heat. Then the chicks are placed in flocks of 100 each in colony houses. There are no lice or vermin on the chicks because they are hatched in incubators. Disease is prevented by as near absolute cleanliness as possible.

When the chicks are in the colony houses they are fed the same mash and whole grains as the laying hens. The mash is mixed up with skim milk obtained from a creamery in the village, for the chicks grow faster and are stronger when having the milk. The cockerels are separated from the pullets when placed in the colony houses. They are confined in the houses and small yards, and much corn is put in their ration. When weighing two pounds they are sold to summer boarding houses.

7.35 LOWEST PRICE YET **155 EGGS**

FOR BIG INCUBATOR

Think of it! The old reliable Progressive 155-Egg Incubator for \$7.35. Money back with 8 per cent interest if not satisfied. Wonderful bargain! Only incubator with hundreds of dead air cells. Copper hot water boiler, double disc regulator, deep nursery, double doors, egg tester, safety lamp—every big feature—all for \$7.35 freight prepaid to you. Incubator and Brooder ordered together, \$9.85. Send your money now, or, if you want more facts, write for our Big Free Book. **PROGRESSIVE INCUBATOR CO.** Box 142 Racine, Wis.

YOUR HENS YOUR FARM YOUR MONEY

Farmers and Fanciers should get the FREE POULTRY BOOK and Catalogue written by ROBERT ESSEX, well known throughout America. After 25 Years With Poultry. It tells How to Make Most From Eggs and Hens for Market or Show, contains Pictures of 30 Poultry Houses, tells cost to build; describes AMERICA'S LARGEST LINE OF INCUBATORS AND BROODERS—\$2.25 to \$48 each. Write today. **Robert Essex Incubator Co., 83 Henry St., Buffalo, N. Y.**

Tells why chicks die

J. C. Reefer, the poultry expert of 1602 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

Get My 1914 Prices

Don't Take a Chance This Year. Let me tell you why the "RELIABLE" is the SAFEST buy and SURE T hatch. No better at any price. Money back, if not satisfied with Reliable Incubators and Brooders. Write tonight for catalog. **J. W. MYERS, Pres.** Reliable Incubator & Brooder Company, Box B-41 Quincy, Ill.

SHOEMAKER'S BOOK on POULTRY

and Almanac for 1914 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. **C. C. SHOEMAKER, Box 962 Freeport, Ill.**

\$8.50 150 Egg Size Incubator and 150 Chick Brooder



Quality Guaranteed Has best regulator made—dependable thermometer—strong, well built egg trays—all metal safety lamps—steel legs—best egg tester. Comes ready to use (not knocked down).

miss it. You never have and probably never will hear of a better offer. Send for full facts quickly. Address

You have never heard of an offer so astonishing! Just think of getting a well made, fully assembled, reliable hatcher and a metal 150 Chick Brooder for such a low price! Incubator alone is \$6.00—Brooder \$3.00—the two for \$8.50, guaranteed to satisfy you or money returned. No other hatcher could get better results—no other brooder could be safer. We guarantee it. To pay more is needless.

Send in Your Name

at once for full details. Fortunate low buying prices and enormous sales make this offer possible. Don't miss it. You never have and probably never will hear of a better offer. Send for full facts quickly. Address

ROCKFORD INCUBATOR CO., Box 31 Rockford, Ill.

1913
RECORD

Magnificent
Crops in all
Western Canada

All parts of the Provinces of Manitoba, Saskatchewan and Alberta have produced wonderful yields of Wheat, Oats, Barley and Flax. Wheat graded from Contract to No. 1 Hard, weighed heavy and yielded from 20 to 45 bushels per acre; 22 bushels was about the total average. Mixed Farming may be considered fully as profitable an industry as grain raising. The excellent grasses full of nutrition, are the only food required either for beef or dairy purposes. In 1912, at Chicago, Western Canada carried off the Championship for beef steer. Good schools, markets convenient, climate excellent. For the homesteader, the man who wishes to farm extensively, or the investor, Canada offers the biggest opportunity of any place on the continent.

Apply for descriptive literature and reduced railway rates to Superintendent of Immigration, Ottawa, Canada, or to Canadian Government Agent.

M. V. McInnes, 176 Jefferson Ave., Detroit, Mich.

W. S. Nethery, Intorurban Building, Columbus, Ohio.

160 ACRE
FARMS
WESTERN
CANADA
FREE

New Holland

Stone Crusher

will crush trap rock or any kind of stone for road making, concrete work, cement sidewalks, fence posts, hog wallows, etc. Make big money crushing stone for your neighbors. These crushers are strong and powerful and easy to operate. The cost is surprisingly low. Send today for interesting free trial offer.

NEW HOLLAND
MACHINE CO.
Box 44, New Holland, Pa.

LET THE
WIND

PUMP YOUR
WATER FOR
NOTHING

WHY PAY FOR GASOLINE WHEN WIND IS FREE!
Get a Big, Heavy, Powerful, Light Running, Double Geared

SAMSON WIND MILL

SEND FOR CATALOG
We also build Ideal Feed Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candle Sticks

STOVER MANUFACTURING COMPANY
216 Samson Avenue, FREEPORT, ILLINOIS

PAINTED ROOFING

\$1.50 A SQUARE
OR 16'4" A SHEET

Galvanized Steel Roofing, \$2.50 a Square, 27c a Sheet. Furnished in 2 1/2 in. corrugated iron at this price per square. 11-4 in. corrugated painted, \$1.65 a square. Galvanized, \$2.00 a square. Price per sheet same as 2 1/2 in. corrugated. Covering width, 24 in. 5 ft. lengths only. Best open hearth steel, perfect quality and finish.

All prices F. O. B. Niles—write for samples and freight paid prices, also for prices on our heavier grades, made in all lengths.

THE SYKES METAL LATH AND ROOFING CO.
540 Walnut Street, NILES, OHIO

LITTLE GEM HATCHERIES

AND BROODERS cost only 40c. each. Over 225,000 now in use. This lady hatched and raised 1,712 chicks in them last year. Send Stamp for Catalog. F. GRUNDY, Poultry Expert, Morrisonville, Illinois.

Latest Book

"Profitable Poultry," 128 pages practical facts, lowest prices on fowls, eggs, incubators, etc. 180 beautiful pictures. Latest improved methods to raise poultry. All about Runner ducks, 52 other varieties pure-bred poultry only 5 cents. Berry's Poultry Farm, Box 39, Clarinda, Ia

BROWN FENCE

NEW BARGAIN BOOK FREE

Send name on postal and get our book and sample to test. Compare our prices. See how much we save you. Our

Low Prices Start at 13c Per Rod

Direct from factory, we pay freight. We use hard, High Carbon, Extra Open Heart Wire. Double Galvanized. Over 150 styles—hog, sheep, poultry, horse, cattle, rabbit fence—farm gates, self-raising gates, lawn fence and gates. Mail postal today for new big money saving catalog and free sample.

THE BROWN FENCE & WIRE CO.
Dept. 24E Cleveland, Ohio

DIRECT FROM FACTORY

WE PAY FREIGHT

Get my Big
FREE BOOK
OF
BUGGY BARGAINS

I am proud of it! It is the best buggy book ever issued, and I want you to have it. It tells how my buggies are built, how they are tested, illustrates finished "jobs" in colors, etc.; best of all, it proves that when you buy a BOHON "BLUE GRASS" BUGGY, you

SAVE \$25 TO \$50

Sold direct from my factory—no dealer, agent or salesman to draw profits or expenses. It's all explained in this book, together with my 30-day free road trial offer, etc. So send for the book TODAY.

D. T. BOHON
118 Main St., Harrodsburg, Ky.



The large flocks cultivate the orchard as they scratch for their hidden grain

The colony houses for the pullets are in a young orchard which is under cultivation with inter-crops of corn, etc. This gives the hens ample scratching ground. They are thereafter supplied with green food, and fed almost in the same way as the laying hens. The pullets began laying in September.

The orchard in which the pullets run contains 150 cherry trees set two years ago, and just coming into bearing. The chicks fertilize the trees and inter-crops by their droppings, and help to keep them cultivated by constantly scratching for grain which is thrown down and covered with a cultivator. The trees have grown very rapidly under such treatment and promise to bear younger than with ordinary treatment. One block of twenty 6-year-old cherry trees last year netted \$50. These trees are in the yards occupied by laying hens and are fertilized and cultivated by them. The trees are beneficial as they furnish shade for the hens.

He Won by Raising Early Chicks

The main factor in profit-making was the raising of the chicks early, which matured into pullets that laid in late fall and early winter when the price of eggs was highest. The eggs were sold direct to grocers at a little above market quotations for strictly fresh, clean, large white eggs.

When Mr. Morse decided to increase his number of hens to 200 or more he built a house 50 feet long and 15 feet wide and divided it with wire partitions into four rooms, planning to keep about fifty hens in a room. Yards were built outside for each division of hens in the house, and for a year or two he kept all the flocks separate. He spent ten hours or more each day in his store, and soon found he did not have time to take good care of hens. To lessen the work he let all the hens run together, both in the house and in the yards, and found they kept as vigorous and laid as many eggs as when separated into flocks of fifty. To reduce the work of feeding he tried the hopper plan and fed dry mash in the latest improved feeding hoppers fastened to the side of the house. He filled the hoppers only once in several days. By this plan all



The colony house for the chicks

the time required besides filling the hoppers was the scattering each day of the "scratch" feed made up of whole grains, the gathering of the eggs, and the cleaning of the house once a week. With more than 250 hens cared for in this way he was still able to maintain the net profit per fowl at close to two dollars.

In working out the best formula for rations Mr. Morse went to the best authorities. After much studying and experimenting to ascertain the best rations he now feeds the following combination for dry mash: 100 pounds wheat bran, 50 pounds wheat middlings, 50 pounds gluten meal, 50 pounds alfalfa meal, 50 pounds corn meal, 50 pounds beef scraps. The scratch feed is composed of 120 pounds of wheat, 120 pounds of cracked corn, and 60 pounds of oats. In the summer two quarts per 100 hens is thrown in the orchards. He aims to cover it with soil, so the hens must work for it all day. In this way henpower is used to cultivate the trees.

In the winter the scratch feed is buried deep in litter, so the hens must work to get it. This provision for the constant exercise of the hens, both winter and summer, is the secret of Mr. Morse's keeping his

hens vigorous. He expects to raise about 1,000 pullets this year—in units of 500 each in two houses, allowing only two square feet of floor space per hen. He sees no scientific reason for putting partitions between hens as long as you keep them busy all the time. The only hens he will keep in a smaller unit than 500 is a flock of breeders from which he gets eggs for hatching. With these he puts the best strains of pure-bred cockerels he can buy, but keeps none with the other hens.

\$700 Profit from 250 Hens

For the unit of 250 hens which Mr. Morse kept two seasons ago, his account book reads as follows:

RECEIPTS	
Eggs sold from 250 hens..	\$960.00
Hen manure	80.00
Total	\$1,040.00
EXPENSES	
Feed purchased for 250 hens for one year	\$300.00
Interest on investment...	47.93
Incidental expenses	22.90
Total	370.83
Leaving a profit of....	\$669.17

What will this combination of cherries and hens earn in the future? You can estimate that as accurately as I can.

A MARYLAND minister has one of the best laying flocks in his State. And if a preacher can do as well as that a layman ought to do still better.

The Dane and His Hen

THE Danes have hen efficiency as well as cow efficiency. The average egg production per hen among the members has been raised to 150 during the past eighteen years since the Danish Co-operative Egg Export Society has been in active operation. This society began with a few hundred members and now has about forty thousand. Members are pledged to gather their eggs every day and ship them at least once a week.

The eggs that are not distributed to consumers by the time they are eight or ten days old are pickled and used to meet the demand for cooking and lower-priced trade. The average return to the Danish farmers for eggs throughout the year is about eighteen cents a dozen, but they are sold by weight. The cost of co-operative collecting and selling is about one-half cent a dozen. The Danish hen, therefore, furnishes the farmers a gross income of about \$2.75 per hen. When they learn just how the egg-laying trait is inherited it will be \$3.75.

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takes all the mystery out of hatching successfully. Three or four times more in use than any other. Guaranteed 20 years, 30 to 90 days' trial—freight prepaid to your station. Orders filled same day received. Write quickly, and learn how to get started the easiest, surest way on the smallest investment. Address

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Dept. 71 Buffalo, N. Y.

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safe arrival guaranteed. No order too large. Hatching EGGS by the setting or thousand, fertility guaranteed. Write for catalogue. **RICHLAND FARMS, Box 19, FREDERICK, MD**

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If you are thinking of buying an incubator or brooder you should send for our big 1914 catalog at once. It describes many new, exclusive improvements in this year's

PRAIRIE STATE Incubators and Brooders

Also contains about 60 pages of valuable poultry information—how to feed, rear and breed; treat diseases, poultry buildings, home grown winter feed, etc. Just out—a postal brings it FREE. Write today—now.

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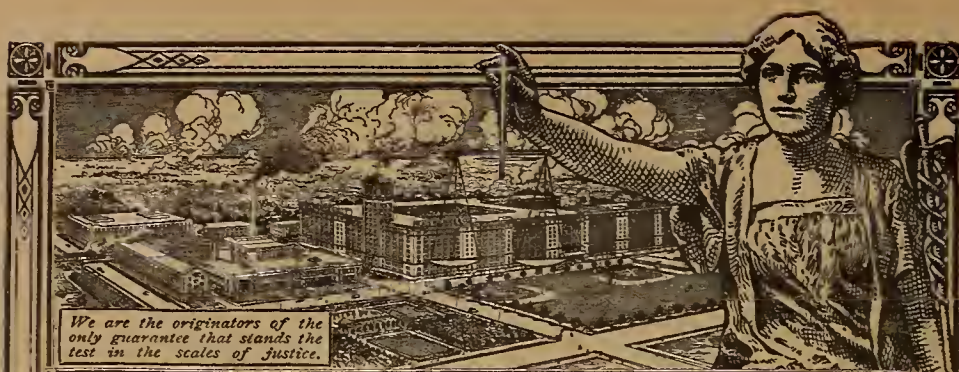
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The following prices enable you to buy a large and a small Economy engine for less than the price of one ordinary engine.

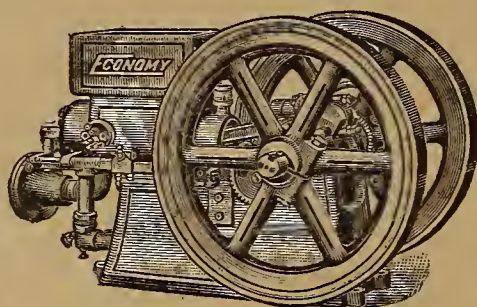
1½-H. P., \$29.95; 2-H. P., \$39.95; 4-H. P., \$72.95; 6-H. P., \$102.95; 8-H. P., \$149.65; 10-H. P., \$219.50.

Turn to the gasoline engine pages of our new big General Catalog, see our complete line of sizes for every purpose. If you haven't our new big General Catalog, just write "Gasoline Engines" on a postal card and also request our free Catalog No. 72F71

EVERY Economy Gasoline Engine is required to pull more than its rated horse power before it leaves our factory. Every part of the Economy fits perfectly, which means less friction, less wear and greater economy of fuel. Duplicate parts are absolutely interchangeable.

The Economy is the simplest engine on the market. It has fewer parts, is easier to operate and is guaranteed to give as good service for as many years as any other make, regardless of price.

If you need a gasoline engine, you will purchase an Economy if you investigate thoroughly, because you cannot find its equal at anywhere near the price we ask.



Sears, Roebuck and Co., Chicago

Does It Pay to Dress Poultry?

By E. E. Whitney

AT THE prices offered by market men there is little or no gain. Sometimes a dressed chicken will bring four or five cents more than it would alive. But the farmer or farmer's wife can hardly make ten cents an hour wages at that figure. Only in winter when other work is not pressing can the farmer afford to work for such wages.

The market men have all conveniences for doing this work, and even if they have to hire an extra man for a day they can do it cheaper than can the farmer. Usually, however, their help is paid by the week. Dressing fowls comes as a part of their regular work. They cannot afford to pay the farmer for doing this work and leave their help idle.

The mature or fat bird dresses away less in proportion than the young or thin one. At the same prices per pound for dressed, the heavy bird might pay for dressing while the light one would bring no more than alive.

There are times when almost every meat market is well supplied with live poultry and it is impossible to sell unless one makes a date ahead, which is not always practicable. Especially around holiday time prices are liable to decline and dealers will contract only as wanted. At such times it is sometimes possible to sell dressed poultry to a grocer, and at a little higher price than the meat-dealers offer.

It does pay to dress poultry for private customers if enough can be disposed of at each place. Hotels, restaurants, boarding houses, and hospitals are usually willing to pay meat-dealers' retail prices for poultry that pleases them. But it must be attractive. The work must be carefully done and the poultry neatly packed.

The following figures are taken from my books, and show the prices obtainable for spring chickens in late fall and winter in three different ways—alive, head and feathers off, or full dressed:

Market Prices
 Alive, 5 5-16 lb @ 12c lb\$0.64
 H. & F. off, 4 12-16 lb @ 15c lb.. .71
 Full dressed, 4 4-16 lb @ 16c lb.. .68

3 cockerels, alive, 15 lb @ 12c....\$1.80
 3 cockerels, H. & F. off, 13 lb @ 15c 1.95
 3 cockerels, full dressed, 11½ lb @ 16c 1.84

In the one instance four cents only was realized on three cockerels, full-drawn, over the price which might have been obtained alive. If sold with head and feathers off, from five to seven cents each might have been obtained for the work of dressing.

At the last Thanksgiving season some markets paid 11 cents per pound alive, and offered only 14 cents per pound for full-dressed. It would have been an absolute loss of time to have dressed poultry at those prices even with chickens weighing five pounds and upward. Smaller ones would have brought even less than alive.

STOP thinking the world owes you a living, for it doesn't, really. Besides, it pays to look the world in the face, secure in the knowledge you're standing upon your own feet.

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Vitalized Rubber calls a halt on "Short Mileage"

Diamond Vitalized Rubber Squeegee Tread Tires

The Vitalized Rubber used in all types of Diamond Tires is pure, young, lusty rubber put through an exclusive Diamond process that toughens and makes it road-resisting, yet elastic to the last mile.

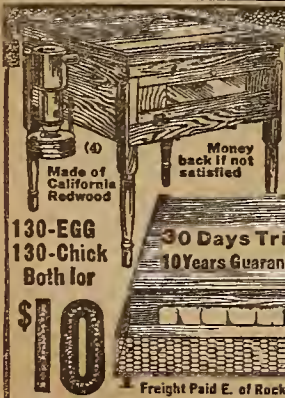
In making Diamond Tires of Vitalized Rubber we put into them additional mileage that you get out in service.

So why not eliminate possible short mileage and continual adjustments by equipping your car with Diamond Vitalized Rubber Tires.

Your dealer can supply you

Ask for Diamond Tires

BEST FOR AUTOMOBILES BICYCLES AND MOTORCYCLES



Wisconsin Wins In Big Hatching Contests

Mrs. J. McMahon, Veedersburg, Ind., in 1910 won in Missouri Valley Farmer Hatching contest, hatching 125 chicks from 126 eggs.

Mr. C. B. Armitage, Atwater, Ohio, in 1911 won in Successful Farming contest, getting 181 chicks from 181 eggs in two hatches.

Mrs. J. W. Mize, Vaughns Mill, Ky., in 1912 won in Successful Farming contest getting 208 chicks from 209 eggs in two settings.

Mrs. F. H. Lewis, Montrose, Pa., in 1913 won in Successful Farming contest getting 96 chicks from 96 eggs in one setting.

130-EGG Incubator & 130-CHICK Brooder, both \$10

180-Egg Incubator—180-Chick Brooder, both for \$11.50

Freight paid East of Rockies—Incubators have hot water heat, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Incubator and Brooder shipped complete with thermometers, lamps, egg-testers, all set up ready to use when you get them. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others we will feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Send for FREE catalog today, or send in your order and save time.

WISCONSIN INCUBATOR CO., Box 112 RACINE, WISC.

Write for FREE CATALOG and we will send a sample of the Redwood our Incubators are made of

LIFE'S ROAD

Smoothed by Change of Food

Worry is a big load to carry and an unnecessary one. When accompanied by indigestion it certainly is cause for the blues.

But the whole trouble may be easily thrown off and life's road be made easy and comfortable by proper eating and the cultivation of good cheer. Read what a Troy woman says:

"Two years ago I made the acquaintance of Grape-Nuts and have used the food once a day, and sometimes twice, ever since.

"At the time I began to use it life was a burden. I was for years afflicted with bilious sick headache, caused by indigestion, and nothing seemed to relieve me.

"The trouble became so severe I had to leave my work for days at a time.

"My nerves were in such a state I could not sleep and the doctor said I was on the verge of nervous prostration. I saw an adv. concerning Grape-Nuts and bought a package for trial.

"What Grape-Nuts has done for me is certainly marvelous. I can now sleep like a child, am entirely free from the old trouble and have not had a headache in over a year. I feel like a new person. I have recommended it to others. One man I knew ate principally Grape-Nuts, while working on the ice all winter, and said he never felt better in his life."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.



EXTRAORDINARY OFFER—30 days free trial on this finest of bicycles—the "Ranger." We will ship it to you on approval, freight prepaid, without a cent deposit in advance. This offer is absolutely genuine. **WRITE TODAY** for our big catalog showing our full line of bicycles for men and women, boys and girls at prices never before equaled for like quality. It is a cyclopaedia of bicycles, sundries and useful bicycle information. It's free. **TIRES, COASTER-BRAKE** rear wheels, inner tubes, lamps, cyclometers, equipment and parts for all bicycles at half usual prices. A limited number of second hand bicycles taken in trade will be closed out at once, at \$3 to \$8 each. **RIDER AGENTS** wanted in each town to ride and exhibit a sample 1914 model Ranger furnished by us. **It Costs You Nothing** to learn what we offer you and how we can do it. You will be astonished and convinced. **Do not buy a bicycle, tires or sundries until you get our catalog and new special offers. Write today.** **MEAD CYCLE CO., Dept. K-83 CHICAGO, ILL.**

MEN WANTED

Prepare as Firemen, Brakemen, Electric Motormen, and colored Train Porters. Hundreds put to work—\$55 to \$150 a month. No experience necessary. 500 more wanted. Enclose stamp for Application Blank. **NAME POSITION YOU WANT** 1. RAILWAY C.I. Dept. 33, INDIANAPOLIS, IND.

Greider's Fine Catalogue and calendar of pure-bred poultry for 1914, large, many pages of poultry facts, different breeds in natural colors, 70 varieties illustrated and described. Incubators and brooders, low price of stock and eggs for hatching. A perfect guide to all poultry raisers. Send 10c for this noted book. **E. H. GREIDER, Box 49, Rheims, Pa.**

DELAWARE FARMS Unusual opportunities now. Cheap lands near best markets. Very profitable. Fine climate. State Board of Agriculture, Dover, Delaware.

Money Making Poultry Our specialty. Leading varieties pure bred chickens, turkeys, ducks and geese. Prize winners. Best stock and eggs. Lowest prices; oldest farm; 25th year. Fine catalog FREE. **H. M. JONES CO., Box 54, Des Moines, Iowa.**

MONEY IN POULTRY Start small. Grow BIG. **SQUABS** Get winter eggs. Keep healthy fowls. Save your chicks. Fox's big book tells how. Describes largest poultry and pigeon farm. Mailed Free. **F. FOY, Box 51, Des Moines, Ia.**

55 BREEDS Pure-Bred Chickens, Ducks, Geese, Turkeys, also Incubators, Supplies, and Collie Dogs. Send 6c for large Poultry book Incubator Catalog and Price List. **H. H. HINIKER, Box 100 Mankato, Minn.**

WE PAY \$80 A MONTH SALARY and furnish rig and all expenses to introduce our guaranteed poultry and stock powders. Address **BIGLER COMPANY, X600 SPRINGFIELD, ILLINOIS**

43 VARIETIES poultry, pigeons, ducks, geese, water fowl. Incubators. Feed and supplies. Catalogue 4 cents. **MISSOURI SQUAB CO., Dept. XX, Kirkwood, Mo.**

PFILE'S 65 Varieties LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1914. Write Henry Pfile, Box 627, Freeport, Ill.

60-p. catalogue free. 60 varieties, chickens, ducks, geese, turkeys, guineas and Bell Hares. Stock for sale, lowest prices. **H. A. Souder, Box 50, Sellersville, Pa.**

INDIAN RUNNER DUCK CULTURE Finest illustrated duck book published. Tells how to hatch and care for greatest egg producing fowl on earth. How to get a start. Quotes low prices on stock and eggs of finest strains. Sent for 5 cents postage. Address **BERRY'S FARM, BOX 143, CLARINDA, IOWA.**

The Market Place

Half-Finished Sheep to Market

By J. P. Ross

THE readiness with which the market has recently been absorbing the floods of half-finished sheep and lambs may be regarded as a proof of the strength of the demand for both mutton and wool. At the same time it is to be regretted that sheepmen have felt it necessary to make these sacrifices, or have been tempted by prevailing prices to make them. This rushing to market of half-fed stuff could be more easily justified if there were any visible signs that these satisfactory prices were a mere temporary flurry likely soon to pass away, but all indications point to continued steadiness of the market for meats of all kinds. As long as high-class lambs command from \$8 to \$8.50, the less choice kinds from \$7 to \$7.75, yearlings \$6.25 to \$7.25, wethers \$5.40 to \$6, and ewes from \$4 to \$5.75, as they have been doing for some time past, and as long as the continuance of such prices seems probable, there surely are no valid reasons for parting with such good property at a loss. Foodstuffs may be dear, but these prices afford a fair equivalent. Moreover, the provident feeder can always find something on the farm which will enable him to keep his sheep from falling back, though of no great value for any other use. This is especially true during such a winter as this.

To refer to the fact that at the close of the year just past there were fewer sheep in this and in all other sheep countries than has been the case for many years, may appear to be the repeating of a "twice-told tale," but it seems to me to be the pressing duty of all interested in sheep culture to keep it continually in mind. Cattle, hogs, and chickens, all have their able exponents, not only in the agricultural but in the daily journals, while the voice of the missionary of the sheepfold is as that of "one crying in the wilderness."

It is up to the farmer to see that the falling off in the sheep supply is remedied, and, as a first step, he must cease sending his unripe stock to market. Then, too, we must retain the best of our ewe lambs to fill the vacancies in our breeding flock, and we must be willing to pay the price necessary to secure pure-bred rams.

More Crops Needed

By L. K. Brown

AS THE winter has progressed the average weight of the hogs marketed has naturally increased gradually. The short traders have sold out, leaving the hogs still in the country more and more in the hands of the regular feeders. This class of men have confidence in the future market, and sell only when their hogs are ready and the market is right. A goodly percentage of the hogs still on feed are in these strong hands.

The January rise saw a reaction just at the close of the month. The mild weather curtailed somewhat the fresh-meat demand and also the Eastern demand. The attractive high prices swelled the receipts a little too much, and the killers had a chance to dictate prices. This was only temporary, as the country balked at the decline, and with lighter receipts quotations quickly advanced past the eight-fifty mark at Chicago. Early February saw these working on toward the nine-dollar mark.

The low price has been a boon to the hog-grower. It has made certain a profit in feeding, and he has taken advantage of it. As a result the hogs will come to market heavier in weight and better in quality, but will be carried a little later in the spring.

Considerable argument is being heard about the new tariff injuring the farmer because of the Argentine corn which can now compete with the domestic product on the American market. While this may be partly responsible for the lower price of corn, it is really a benefit to the farmer. The high prices of feedstuffs the past few years has been greatly responsible for the general live-stock shortage. Continued moderate grain values stimulate live-stock production, and upon live-stock production depends the farmer's prosperity. A country that is short on staple foodstuffs, although they may be high-priced, is not as prosperous as one where foodstuffs are plentiful with but a moderate valuation. A nation's wealth is based on the quantity of its staple products, and not upon their monetary value.

Zebroids as Work Animals?

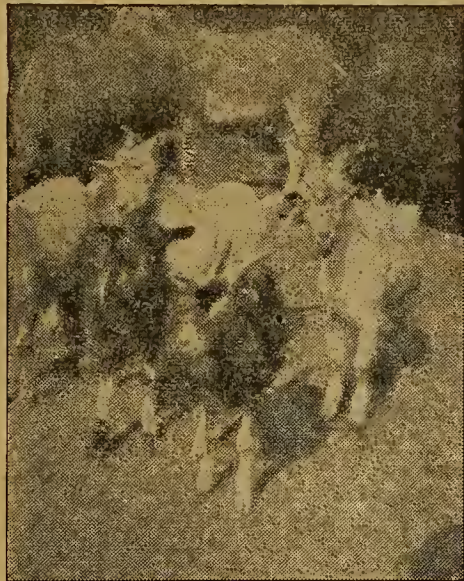
HAGENBECK of trained-animal fame was the first to harness zebra-horse crosses and make them work. For the past seven years Uncle Sam has been conducting experiments partly with the utility end in view, but more particularly along the line of the breeding characteristic of zebras. The experiments began when in

1906 the king of Abyssinia presented President Roosevelt with a splendid Grévy zebra.

This type of zebra has never been domesticated so far as known, and the hybrid—most of them zebra-jennet crosses—are perhaps more difficult to handle than those trained by Hagenbeck, who used a smaller type of zebra.

One team of Uncle Sam's hybrids have been harnessed and driven, but they are skittish and treacherous. Even in the pasture at the government farm in Beltsville, Maryland, they are very handy with their hind feet.

Just before the illustration above was taken, the milch goats which the Depart-



Some of the Government's milch goats, zebroids in the background

ment is experimenting with, and which share the zebroids' pasture, spied the camera and insisted upon getting into the picture. Once in the field of the camera they refused to budge. As they were more eager posers than the zebroids their picture was taken to accommodate them, whereupon they went their way and allowed a trio of the zebroids to be taken alone, as shown in the second picture in this column.



The hybrids resemble mules somewhat, but are stockier and more graceful

The zebroids are stocky, resembling a small draft horse in conformation, and, except as reminders of convict labor, make a handsome appearance in the paddock.

South Carolina Records

By Allan Nicholson, of that State

FARM AND FIRESIDE'S usually alert, careful, and accurate editor must have been very, very drowsy when he wrote for the December 20th number the editorial under the caption, "The World's Corn Record," for there appeared in it a number of unaccountable and unfortunate errors.

The first and most important of these, and which very deeply concerns South Carolinians particularly, is the statement that both the men and boys records were made in the State of North Carolina, whereas, as a matter of fact, it is South Carolina to which these honors belong. Captain Zachariah Jordan Drake of Marlboro County, South Carolina, in 1889 made a yield of 255 bushels on one acre, and Jerry H. Moore of Florence County, South Carolina, in 1910 produced the marvelous yield of 228.75 bushels on one acre.

All South Carolinians are so proud of these remarkable records that they cannot permit the errors to go uncorrected.

In the same article it was stated that the boy who made the big record "spent nearly two hundred dollars for fertilizer," and in a comparison made with an Iowa boy it was endeavored to show that the Iowa lad, who did a very creditable piece of work in producing over ninety bushels of corn on one acre, without any commercial fertilizer, really did a better piece of farming than the one who invested in commercial fertilizer. In order to be absolutely sure of the facts I wrote to South Carolina's Commissioner of Agriculture, Hon. E. J. Watson, and asked him to supply me with them. From

what he has furnished us we can state authoritatively:

Jerry Moore, the World's Boy Champion Corn-Grower from 1910 up to 1913, did not use anything like two hundred dollars' worth of fertilizer. Indeed, the whole cost of producing his crop did not amount to that sum. It was only \$128.05, which made his corn cost him 42 cents per bushel.

The boy's own statement as to his method of cultivation, fertilization, etc., in growing his prize acre in 1910 will be of general interest. It is given below:

The land was of light gray sandy upland; top soil about three or four inches deep, with just enough drain for the water to run off. Cotton was grown on the land in 1909, producing about twelve hundred pounds of seed cotton.

Five men—J. M. Leach, H. P. Haselden, W. E. Bailey, J. T. Bailey, and Roger Williams—measured the land and weighed the corn, whose certificates are in the custody of the county superintendent of education. The corn was weighed in the shocks and weighed 16,388 pounds. They took 200 pounds of corn from the acre at sundown, shucked and shelled, and got 115 pounds of shelled corn and 45 pounds of cobs and shucks. This shows 77½ per cent. of corn and 22½ per cent. of cobs and shucks. This percentage makes a yield of 228.75 bushels.

At the market value, one dollar per bushel, the corn from the acre is worth \$228.75; 3,000 pounds fodder, \$30; total value of crop, \$258.75.

Cost of rent	\$5.00
Cost of preparing seed bed	4.00
Cost of planting	2.00
Cost of manure	25.00
Cost of commercial fertilizer	66.55
Cost of cultivation	11.50
Cost of gathering corn	8.00
Cost of gathering fodder	6.00

Total cost\$128.05

The total value, \$258.75, less the total expenses, \$128.05, leaves a net profit of \$130.70.

The stable manure used was very trashy (much straw in it), and not worth more than fifty cents a load. As the dirt has no commercial value, I did not count it in the list of expenses, and the land has been improved at least fifty dollars by the dirt and stable manure. What I have done has been more an experiment than doing what I knew to be wise. I am only fifteen years old. Hoping to do better in the future, I am.

Yours very truly,

JERRY H. MOORE.

As to the Iowa boy having a better crop than Jerry Moore because he raised something over ninety bushels of corn on one acre without using commercial fertilizer, when the South Carolina lad grew 228.75 bushels by investing \$66.55 for commercial fertilizer and \$25 for manure, it seems to me that Moore used decidedly better business judgment. Granting that he could have raised as much corn as the Iowa boy did, without the use of fertilizer, then it requires very little figuring to show that through its use he made 130 bushels more, or by the extra yield he paid for his fertilizer twice over!

Corn-Raising Results in Education

Jerry is now receiving his education at the State Agricultural College as a reward given him by the Legislature. For that reason he has not been attempting to make prize records for the past few years, otherwise Walker Lee Dunson of Alabama might not in December, 1913, have been made the World's Champion Boy Corn-Grower because of his yield of 232.7 bushels on a single acre at a cost of 19.9 cents per bushel.

Another and even more recent agricultural record, though in a different line, of which South Carolinians are justly proud, is that of little Miss Lizzie Kelly, who in 1913, on one tenth of an acre, raised 4,375 pounds of tomatoes. From these, besides supplying a large family with tomatoes for the entire season, she sold \$20.10 worth fresh, and canned \$70 worth for the market. Her profits from this part of an acre were \$73.83, or at the rate of \$738.30 per acre!

Miss Kelly is only thirteen years old, but as one of the active and industrious girls of the Tomato Club at Kelly No. 2 School, she made this splendid record, which won for her not only the state championship but a free trip to Washington at the Federal Government's expense. There she was awarded second honor in the National Contest.

South Carolina does not begrudge all agricultural honors that are really won or bestowed upon the residents of other States, but when her sons and daughters have made marvelous yields and been accorded the title of champion in their respective fields of endeavor, it is desired that this credit be given them. It is for this purpose that this statement is written. It is believed that FARM AND FIRESIDE will cheerfully publish it.

EDITOR'S NOTE: Indeed we do cheerfully publish the statement given above. The editorial which has been corrected by this article was based on published accounts. We are glad to be set right. Mr. Nicholson indicates pretty clearly how easily the South can beat the North in acre yields. We agree with him that the net profits per acre should be taken into consideration in all of this contest work.

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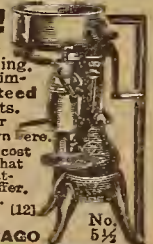
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Live Stock and Dairy

One Way to Cut Down Expense

By Hollister Sage

AS I was going through a village some time ago I recalled how much easier it is to pitch hay and manure down than up. Almost every barn, new and old, was made on one model, that of driving in on a level with the bottom of the mows.

In many cases the buildings stood on side hills where by a little judicious planning all or nearly all lifting could have been avoided.

Barns built after carefully drawn plans save a large per cent. of the time of the hands doing the work in them. Is it not then economy for a man about to build to employ an architect to most carefully select the site and arrange the plans? Economical sites for stock barns, fodder barns, and silos do not happen; sometimes they have to be made.

There are two things that should never be forgotten: 1. Never build where it is impossible to procure water (pipe it in if practicable). 2. It is usually unwise to place a barn on a level piece of land if a rolling surface or a slope to south, east, or west is available.

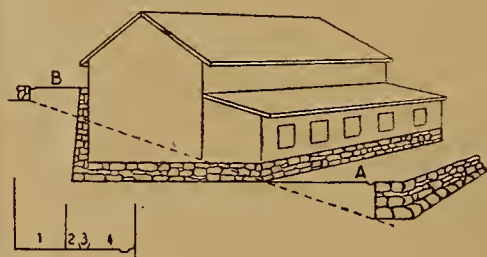
Why? Because it will prove wasteful in the use of help in doing the work there. To locate buildings near the center of the farm is good policy nearly always, but this rule may be broken if an economical site and running water are procurable away from the exact center.

Let it be recalled that it is much cheaper and easier to push hay, forage, grain, manure, and other bulky things down than to lift them, especially by human strength. Carriers, carts, and spreaders ought to be hung as near the ground as conditions will allow. The top of a haymow should be reached by a roadway back of the barn, and the hay tipped off into it in great rolls, in one tenth of the time required by a horse fork, to say nothing of hand pitching.

Against the Manure Pits

Manure sheds and pits must be abolished if the help problem is to be met intelligently. In their places let the stable open full length on a side hill which has been so excavated that the spreader may be driven along with its top near or below the level of the drops. In cases where a carrier takes out the manure it should swing within a few inches of the floor, and the ground outside where the spreader backs up must be low enough for it to receive each load without pushing the carrier up any incline.

As an example notice the sketch of a combination stock and hay barn. The main structure has twenty-four-foot posts and is as wide as it is high. It is set in a bank that faces south, having a slope as shown by the dotted line. There was no great amount of excavating. A portion of the soil moved was used on the ground to fill in the drives A and B, A being some twenty feet lower than B. The hay is all taken onto the upper drive and tumbled by horse-



power into doors that are 6x8 feet, one half in the roof, and falls by its own weight into the hay below. This barn can be filled clear to the ridge by a little mowing at the last, and the pressure on the hay below makes the great mow hold much more than a shallow one would hold.

This hay all falls eventually into a passageway ahead of the cows (2) and into the manger (3). The manure on this farm is handled but once. It is thrown through the windows into a spreader, whose wheels crunch the gravel at A, four feet below the stable floor. The manure is spread on grass or plowed lands within the hour, daily. Where twenty cows are kept, a barn constructed on these lines will save at least the wages of one strong man. Numerous other plans may be evolved from these principles.

No Cure for Johne's Disease

By Dr. A. S. Alexander

"I HAVE a cow eight years old that is affected with a sort of scours or diarrhoea, which seems to come and go. She is in poor condition, and is due to calve at this date. She has a sort of stagger in her hind parts and has no life; stands about and is always the last to come in at night, but has a good appetite and eats all she gets. I am feeding corn fodder, oats, cut grain, and oat straw, with about six pounds per day of a stock feed. I would be glad of any advice as to the betterment of her condition. According to what I have read this

cow's condition compares with the description given of Johne's Disease." This question comes from a reader in Pennsylvania.

A cow in the condition described should not be stabled with well cows, as her disease may be contagious. The first step should be to have her tested with tuberculin, as tuberculosis sometimes is indicated by the symptoms you describe. If she does not react to the injection of tuberculin we would almost take it as certain that she has Johne's Disease, and there is no cure. The disease is spread by the manure of an affected animal, and so you should clean up, disinfect, and whitewash the stable occupied by the scouring cow. Tuberculosis also is incurable.



Why a Horse Balks

And Why it Should Not be Whipped

By Edward Vaughn

BALKY horses are nearly as old as the horse family. In different parts of the world they are called by different names. But the poet says a rose by any other name would smell the same.

When your horse refuses to go you sometimes call it by other names yourself, so give other nations the same privilege.

But the question arises, How much good have you done by calling your horse other names? Have you caused it to go, or have you only worked yourself into a passion and beaten your poor horse half to death, with no better result than you would have had had you turned around and thrown stones back down the road? Do you know what your horse would say to you if it could talk—that is, under circumstances like the above? Well, sir, it would more than likely start in by calling you some other name, and wind up by saying, "Fool, can't you see that I am tied here? I can't go. Why do you beat me?"

Yes, my friend, that is exactly what the horse thinks.

Let me illustrate: Have you ever seen a man whip a horse tied in a stall? If you did, you noticed that the horse did not try to get away. It would jump around, snort, paw, kick possibly, but it would not try to get away. Why, you ask, does it not try to get away? For the very good reason it has good horse sense and will not try a thing that it knows it cannot do. Sometime in the past it tried to break its halter, found it impossible, and, like a good, sensible horse that it knows itself to be, will not try again. So it is with your balky horse. Sometime in the past someone overloaded the poor horse, got it stuck, then beat it for a while, and, as a last resort, unhitched and left the load; then, taking the bruised, half-dead-with-fright, so-called balky horse to the barn, unloaded the whole wagon, pried it out, and, if it were in the mud, pulled it up on solid footing, hitched the balky horse up again, and, after a lot of swinging around, finally got off.

Doesn't the Horse Reason?

But, you say, that should not make the horse permanently balky. Well, sometimes it does not, but one or two more overloads, one or two more beatings, and it is all over with your horse's working days. If your horse could reason from cause to effect, the same as you, then we would never have such a thing as a balky horse. But it can't. It knows only this: one time it was rigged up with a lot of straps around its neck (collar), a lot more covering its body (harness), and tied to a solid place (wagon). Its master at that time beat it and yanked it around until it was almost dead, and it could not get away, so, with the same straps upon its body, the tugs fast, neck yoke up, every environment the same as when it tried to go upon a previous occasion and could not, why should it try again? Sometimes, by leading it, you can get it to go, but if it comes up against the collar and then flies back, the above cause is the reason for it—it thinks itself tied and will try no more.

And now comes another kind of a balky horse—the kind that has been used only as a driver. They balk sometimes. The reason amounts to the same thing. They have been driven until they become leg

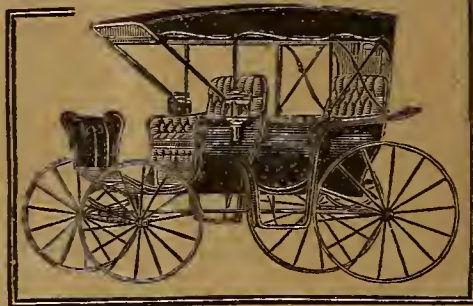
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weary, and then reach a hill, try to go up, finding it too hard they give up, and will not try again. So, you see, man is always to blame for every spoiled horse. I could go on indefinitely giving different reasons for producing the same effect. All horses balk because they give up, not because they don't want to go but because they don't believe they can go. For still greater proof, tie your horse with a good strong rope. Then try to lead it away without untying it. You say you would not be such a fool, and you would be right, and yet to the balky horse the positions are exactly alike. It would try to get away from one as quickly as the other. Think it over.

Washing and Working Butter

By H. F. Judkins

THE process of properly washing butter is not as easy as the word might indicate. In the first place only clean, pure spring or well water should be used. But the temperature of the wash water is the main factor to be considered. Upon it depends largely the condition of the butter for working and the overrun, which consists chiefly of moisture. The temperature of the buttermilk, the temperature of the churning-room, and the condition of the butter globules are used as a guide in determining the correct wash-water temperature. If the butter comes very soft the wash-water temperature must be below that of the buttermilk and the butter must remain in the water until it is firm enough to be worked. In summer it may be necessary to ice the water. If the butter is too firm when it comes the globules will not adhere to each other, and will not take up salt readily.

If the temperature of the buttermilk from a certain churning was 56° F. and the room cool, the butter would probably be very firm. Under these conditions it would be wise to have the temperature of the wash water in the vicinity of 58° or 60° F. This would not only put the butter in better shape for working but also tend to increase the moisture content.

A High Moisture Content Desirable

A federal ruling allows a moisture content up to but not including 16 per cent. It has been proved that butter with a high percentage of moisture is of as good a quality and keeps as well as butter with a low moisture content. To avoid exceeding the limit, one should not aim to get a moisture content of over 15 to 15½ per cent. While the average farm butter-maker does not have the apparatus to operate the moisture test, he may from time to time send samples of his butter to his experiment station or to a creamery that has the necessary apparatus. That this matter is too often neglected is shown by the fact that samples of farm dairy butter seldom contain more than 12 or 13 per cent. moisture.

Having decided upon a satisfactory temperature, it is an easy matter to pour the water into the churn, using about the same amount as the buttermilk which was drawn off. It is a good plan to revolve the churn a half dozen times and then draw off the wash water, which will be quite milky. Repeat the operation and the water will come out nearly clear.

The main objects in working butter are to distribute the salt evenly, to remove all the remaining buttermilk possible, and to get the butter into shape for packing.

Salting the Butter Properly

In salting, use a good grade of dairy salt and see to it that it is clean and free from lumps when it is sprinkled on the butter. Use about one ounce of salt to each pound of butter to be salted. The salt may be added while the butter is still in the churn. I have known of cases where all the working the butter received was simply a shaking around in the churn by giving the churn a dozen or so revolutions. It is impossible to get the salt evenly distributed when this process is used, and the results of its use show up in the form of mottled butter.

The best method is to spread the butter out over the worker and then add the salt. If the butter is firm enough it is well to dash a little cold water over it during the working process. This will aid in a thorough incorporation of the salt, in the removal of the buttermilk, and may help to increase the moisture content.

The butter-maker will have to judge by taste and general appearance when the butter has been worked enough. If on trial the butter tastes very gritty it should be worked a little longer, as this indicates that the salt has not yet been thoroughly incorporated. If the butter is too soft when placed on the worker, or if the room is too warm, the butter will stand but little working at one time. In this case it may be placed in a refrigerator for a short time, and then the working may be completed. In general, if the butter is medium firm it may be sent back and forth under the roller fifteen to twenty times before it is worked in good shape. When the butter has been worked enough it can be rolled up without breaking, and is then ready to be packed.

E.W.

Teaching a Mare to Back

By David Buffum

A PROBLEM which I was asked to solve not long ago was that of teaching a fine bay mare, six years old, weighing eleven hundred pounds, to back. Her owner writes: "She was well trained and is a good driver. She had never done any work when purchased, but has developed into a good worker with the exception that she does not like to back when hitched to a lumber wagon. She behaves fairly well in the open, but when required to back the wagon under a shed refuses to do so. The animal has a good disposition and is willing to do anything else. She has never been worked with another horse, as she is the only horse on a small farm."

In teaching a mare such as this one to hack with a load under a shed, the same principles must be applied that the skilled trainer uses in first teaching a colt to back. The pressure upon the mouth should be very firm and steady but instantly released the moment the colt complies with your wish and steps backward. Then the operation is repeated.

For the reins it is best to use a long strong rope each end of which is tied into the bit. Now get the animal in front of the shed in position to hack in. Have a strong ring attached to the back wall of the shed and pass the rope rein through it and hold them tightly, bringing a strong pressure to bear upon the bit. In a little while the animal will yield to this pressure, and to escape the pressure and the slight pain the bit is giving her she will take a reluctant step backward. Do not at once take up the slack but let her stand a moment, then tighten the reins again till her nose is pulled well in toward her breast. She will step back a little quicker this time, but you must still be in no hurry to take up the slack. Let her stand a few moments as before and then repeat the operation.

Remember that your whole chance of success lies in making your mare understand that the very instant that she complies with your wish she escapes the pain of the bit pressure.

In applying this treatment you must be sure and have all your rigging strong, use good judgment, and keep your temper. This method will always cure if conducted as described and intelligently applied.

Treatment for Ringbone

By Dr. A. S. Alexander

I AM asked by a New Jersey reader, "What is the best cure for ringbone of three months' standing?"

If a ringbone causes lameness and is on a hind pastern, it should be punctured and blistered by a graduate veterinarian and the animal then tied up short in stall for a six weeks' rest. If the ringbone is on a fore pastern or coronet, and causes lameness, it will have to be treated by "high unnering." Firing and blistering does not avail in bad cases of ringbone lameness of a forefoot. If no lameness is present and the animal is young and growing, give absolute rest for months and keep cold wet swabs upon part. Later repeated blistering may be done with a mixture of one dram of biniodide of mercury and two ounces of cerate of caustharides, if the enlargement does not subside or if lameness ensues.

Stable Broom of Brush

By R. W. Green

A STABLE BROOM that will outwear a purchased broom and cost nothing but half an hour's time is made as follows:

Cut enough stiff brush—gray hirc is best—to make a hundle six inches in diameter at the butt when all the large ends are placed together. Tie as tightly as possible with cord or light rope. Now take an old fork handle, taper to a blunt point at the lower end, and drive into the center of the hundle of butts. An extra wedge may be needed if the hundle was not tightly tied. This stable broom will last several months and is excellent for cleaning rough floors and sweeping manure.

Catarrh in Hogs

By Dr. A. S. Alexander

A BROOD sow belonging to a Missouri subscriber is described as having a mucous discharge from the nostrils. She has been fed raw potatoes that have been frozen.

Raw potatoes are a poor ration for swine under any circumstances, and potatoes that have been frozen are worse than useless as feed. Boiled potatoes, fed along with barley meal, are excellent for finishing off fattening hogs. They may also be used as part of ration for sows and growing pigs.

Potatoes, however, have nothing whatever to do with the discharge from the nostrils. That is due to catarrh, from cold and exposure, and will be likely to pass off if the sows and pigs are given free range on good grass or clover pasture and kept out of dusty or wet heds. No medicine will be needed, but plenty of nutritious feed should be given in addition to grass.

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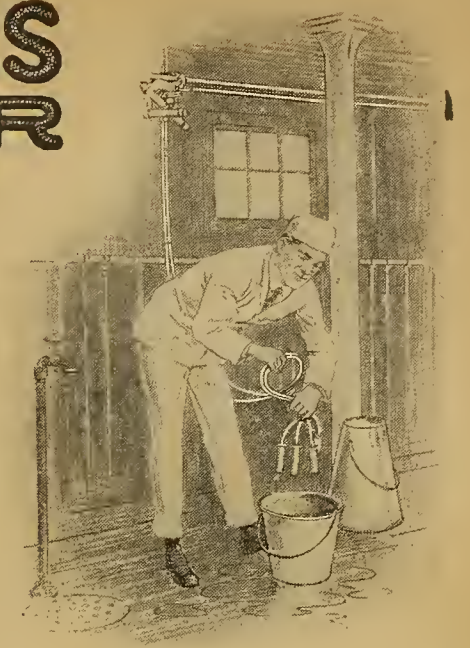
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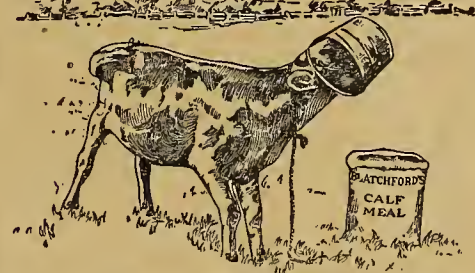
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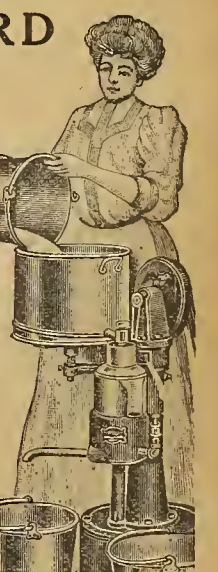
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Garden and Orchard

Preparing Spray Materials

By A. J. Rogers, Jr.

IF ALL the spray materials, lime-sulphur solution is the most disagreeable to handle. When there is the least bit of wind stirring the spray gets into one's eyes, and is very irritating. This can be prevented by wearing goggles, although the clouding of the glasses is both-ersome, and they have to be continually wiped off. It is best before starting all spray operations to cover the face and hands with vaseline.

In a large orchard a great deal of water is used at this time. The only water available on our farm is from a well two hundred and forty feet deep. This is pumped by a windmill or an auxiliary gasoline engine, up to a thirty-barrel tank. This tank is situated directly under the rafters of a lean-to on my barn. By continuous pumping the tank can be filled in about eight hours. There is room in this lean-to for the spray wagon to drive in one door, stop under the tank, and drive out another door. Water from the supply tank flows through a two-inch siphon pipe to the spray tank. My two hundred and fifty gallon spray tank can be filled in this way in five minutes. We used to think ourselves fortunate to fill it with buckets in half an hour.

Arsenate of lead usually comes in a paste form. This is the best way to use it, and



A good way to work up the arsenate of lead

the safest as regards one's health. It is usually added to a fungicide, but may be

sprayed alone when only the biting insect is to be looked for. Two pounds of arsenate of lead are used to every fifty gallons of water or spray mixture. The arsenate of lead must be mixed or churned into a milky consistency, so that it will readily pass through a strainer. A very good way to mix this with water is shown in the accompanying illustration.

Tobacco and nicotine preparations are largely supplanting the oil sprays for the control of plant lice or aphids during the growing season. The preparation is simply a matter of dilution according to directions. The dormant spray (for using before the leaves open) of lime-sulphur solution will destroy many aphid eggs, as well as control the San José scale and other scales. Lime-sulphur solution is not only a good contact insecticide but also a very efficient fungicide.

I use the commercial form of the lime-sulphur solution. For the dormant spray one gallon of lime-sulphur is diluted with eight gallons of water. For the summer spraying of apples the dilution is one to forty. This dilution is based on the standard specific density of the lime-sulphur solution, which is 32° Beaumé. A hydrometer for testing this is shown in the illustration. I usually test each barrel when I buy it, and mark the density on the outside of the barrel with a crayon.

By referring to the table (as shown below) the proper dilution is found for densities of lime-sulphur solution greater or less than 32° Beaumé.

One of the objections by growers to the use of Bordeaux mixture as a fungicide is its complexity of preparation in contrast to the simple dilutions of the lime-sulphur spray. A very easy and equally efficient method of preparation recommended by the Woburn Experiment Station of England, and one that I have used for the past two years, is as follows: Make a saturated stock solution of copper sulphate by suspending fifty pounds of the blue crystals in a gunny sack over the side of a barrel into about fifteen gallons of water. After remaining twenty-four hours there should be about five pounds of the copper sulphate left in the sack, and each gallon (at ordinary temperature) will contain three pounds of copper sulphate. Slake and dilute four pounds of stone lime with nearly fifty gallons of water. To this add slowly one and one-third gallons of the copper-sulphate solution, stirring vigorously.

Bordeaux mixture seems to be the best and most efficient fungicide known at the present time, but it does damage the fruit, especially in damp weather when applied just after the petals fall.

Hydrometer reading in degrees Beaumé	Number gallons water for one gallon lime-sulphur (Dormant period)	Number gallons water for one gallon lime-sulphur (Growing period)
25	5½	27¾
26	5¾	29½
27	6	31
28	6½	32¾
29	6¾	34½
30	7	36
31	7½	37¾
32	7¾	40
33	8	41½
34	8½	43¾
35	9	45

This table, if studied and then followed, will be found very useful

Because of the tender foliage on the peach tree, Bordeaux mixture and lime-sulphur solution are not very satisfactory. The self-boiled lime and sulphur has been found effective in preventing the brown rot and peach scab without damaging the foliage and fruit.

Make Lime-Sulphur in Large Quantities

The mixture is a purely physical one, and is best made in large quantities. Slake thirty-two pounds of good stone lime in just enough water to cover it. Before the lime gets hot, thirty-two pounds of flowers of sulphur are added, care being taken to get all the lumps broken up. As soon as the lime has been slaked, cool immediately by diluting with fifty gallons of water. This is strained into the tank and diluted up to two hundred gallons.

For the grower who has a large orchard to spray at a certain time the problem of spraying is far greater than to the small grower. The latter need not invest in expensive power sprayers. A twenty-dollar barrel outfit will handle the acre orchard very nicely, and since the small grower can be more timely in making the applications his results can be even more satisfactory. No expensive plants are necessary to install for either large or small growers. Once having the spraying machinery, spray materials and labor will do the rest. Last year I clubbed with several fellow growers and bought my lime-sulphur and arsenate of lead very cheaply. Our State Horticultural Society also handles spray materials for its members, and in that way wholesale prices are obtained. In other States the situation is taken care of in somewhat the same way.

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The Girdling Tree Labels

By C. M. Weed



This was not fastened in a loop

THERE are many advantages in having fruit trees so labeled that one can tell the name of the variety and the date of planting at any time. But with most sorts of labels there is danger that the attaching wire will bind the bark before one notices the need of change. Such a condition as shown in this picture is not at all uncommon. The supporting wire has become embedded in the bark and is likely soon to interfere seriously with the flow of sap.

When young trees are set out, one is likely to leave the labels on them that were put on at the nursery. Such labels are often fastened tightly around the trunk. If left, the resulting injury may be very serious and possibly render the tree worthless, for the young trees increase in diameter very rapidly and may outgrow the limits of the label wire the first season.

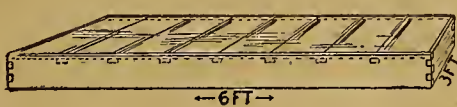
To avoid such troubles use long wires attached to side branches and so tied that there is easy slipping as the branch increases in size. Even then inspect them occasionally to see that none have been caught in a way to injure the tree.

Hotbed Hunches

By E. G. Kinsell

AN EXPERIENCE of thirty-five years in the use of hotbed sash has taught me that it is much more satisfactory to put the strips crosswise than the long way of the sash. They will then not sag under the weight of the glass or snow. I have long since abandoned the practice of lapping the glass, and simply joint them edge to edge. This of course permits all rain water to drip through, but water does no harm to hotbeds, as they often do not get enough moisture.

I use only 1½-inch heart pine or white pine for frame. I do not use any sapwood whatever. I make side strips 3½ inches wide and ends 4½ inches wide, and frame together with mortises and tenons. I use strips of same 1½-inch stuff and 1¼ inches thick, cutting all rabbits ¾ inch deep each



way. These strips are let into side frames in mortises about one inch deep, and several of them held well with small nails to prevent side frame from springing.

I make the spaces for glass 10, 8, and 6 inches wide, using the narrower spaces to utilize the broken glass from the larger spaces. I use no putty whatever, as it soon drops out. I use only tinner's or glaziers' brads, which are easily replaced. Such sash should be usual size of 3 by 6 feet, and need not be painted if made of heartwood. Painting does little good, as decay always begins in the mortises, where one cannot put paint.

EDITOR'S SUGGESTION: Why not treat the tenons and mortises, in fact the entire frames, with crude or linseed oil instead of painting them?

Salt for Asparagus

SALT has often been recommended as an application for asparagus. It is questionable whether it has any appreciable effect on the growth of asparagus. It may be used to kill some of the weeds, and it is not likely to harm the asparagus plants even if applied in sufficient amount to whiten the ground. I have at times thrown the concentrated brine from the pork or pickled meat barrel, after the meat had been taken out, on asparagus hills, almost by the painful, without noticing other than beneficial effects. This comes undoubtedly more from the nitrogenous or other fertilizing matter contained in the brine than from the salt alone. For weed-killing we depend more on stirring the soil around or over the asparagus plants and roots than on salt applications.

T. GR.

Moles in the Garden

OUR strong loams here do not offer a congenial home for the mole. It is in the sandy loams, muck, and other soils filled with organic matter, and consequently with earthworms, grubs, etc., that the moles delight to burrow. They make a general nuisance of themselves by undermining the plants for worms, causing the soil around the plant roots to dry out and the plants to die. Skillful trapping, persisted in until the supply of moles from home grounds as well as from adjoining premises are pretty

well cleaned out, has proved to be almost the only successful method of fighting this at times very troublesome animal. A Kansas reader now informs me that he has managed to protect his tulip bed from the moles' ravages by surrounding the bed with a box made of old boards,—without bottom of course,—the boards sunk into the ground even with the surface, thus effectively fencing the moles out. This is also a good method for hotbeds and cold-frames, in which a mole or two, if they happen to get in, may do a lot of damage. Better be on the lookout for them.

T. GR.

Think Now of Tree-Setting

By H. F. Grinstead

OF ALL the fruit and shade trees I ever set I have not lost an average of two per cent., and most of these were large trees set late in the season. I attribute my success with fruit trees to thorough preparation of the soil and care in setting. Though a tree is not to be set till spring, holes should be dug in winter so that the lower strata of subsoil may be exposed to frost and rains. If there is hardpan under the soil, loosen it with a charge of two ounces of dynamite. Dig away the first foot of top soil and with a crowbar make a hole straight down a foot deep. Take one-fourth of a half-pound stick of dynamite, a foot of fuse, and a percussion cap. Put the squared end of the fuse in the cap, and this in the piece of dynamite. The fuse will barely come to the surface. This appears to be a small charge, but it will loosen the ground for some distance. It will not remove much of the earth—just loosen it. In stony ground it is cheaper than digging, since the material for a shot costs only about five cents. Whether a hole is dug or shot, the snows and rains of winter stand in it, and the frost loosens the edges till a tree set in a place thus prepared for it will be in much better position to stand an unfavorable spring and summer than one put in a freshly dug hole. Trees can also be set earlier in spring, as the sides of the hole will be dry and can be shoveled off into the wetter bottom.

Concrete Walls for Cold-Frames

By Marc N. Goodnow

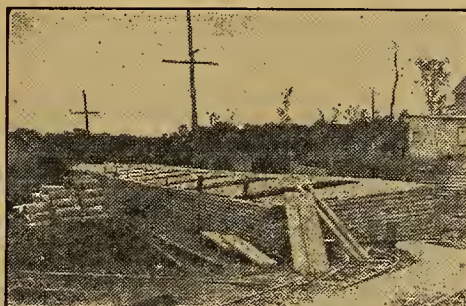
CONCRETE spells economy in cold-frame construction and maintenance, being able to withstand dampness of ground in which the frame should be built and at the same time making a perfect protection against cold and insuring against rot.

The best location for cold-frames is on the sunny side of a building or wall. If this is not convenient the north or windward side should be raised a foot or two for protection from raw winds. There should be three or four compartments, with three or four sashes for each compartment. The bed in the accompanying illustration is longer than most gardeners need, but a wide discretion can be exercised as to length, provided the concrete is properly placed.

Excavate to a depth of about three feet the width and length of the bed. Use 1-inch lumber in making the box forms. The south or front wall should be six inches and the rear or north wall fifteen or eighteen inches above ground. The distance between them should be at least two or three inches less than the length of the sashes to allow for overlapping.

The Proportions of the Mixture

Mix the concrete in the proportions of one part cement, two and one-half parts sand, and five parts crushed stone or gravel. Have the mixture wet enough to quake and



One form of cold-frame

Some of the sashes are raised. Cement boards, tile posts, and trackage are seen in the foreground

pour it without breaks. No reinforcing need be used in the walls, though the corners should be strengthened by iron rods bent at right angles. Bolts to secure the wooden frames can be set in the moist concrete, or a flange or shelf can be provided in the tops of the walls into which to place the frames by embedding in them a strip of wood the thickness of the sashes and at least an inch wide.

Let the mixture in the forms stand for a week. Grooves can be provided in the walls for the addition later of compartment walls. It is also a good idea to tamp in a bed of cinders four inches thick around three sides of the concrete walls, upon which to lay a surface of concrete for a sidewalk at least eighteen inches wide.

For a bed forty feet long the cost for broken stone, sand, and Portland cement should not exceed twelve or thirteen dollars.



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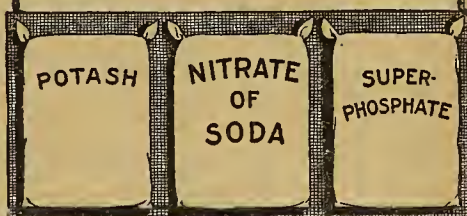
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BIGGEST MONEY-MAKER KNOWN—INVESTIGATE The greatest forage plant that grows. Nothing equal for fertilizing. Excels Alfalfa as a producer. Crop worth \$50 to \$125 per A. Easy to start. Grows everywhere. Can save you money on best tested, guaranteed seed. Write today for Free Sample, circular and 76-page catalog.

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Kill These Pests

If you allow them to ruin your fruit trees, plants and vines, it is your own fault as they are easily killed by spraying.

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make the work easy and the results sure. Endorsed by successful growers. Shipped for 10 days trial upon receipt of \$3. Your money refunded if not O. K. Write today for particulars and Treatise on Orchard Enemies (mailed free).

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Disk Tools for Intensive Tillage

There isn't a farmer in America but who should own at least one CUT-AWAY (CLARK) disk harrow or plow.

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Crops and Soils

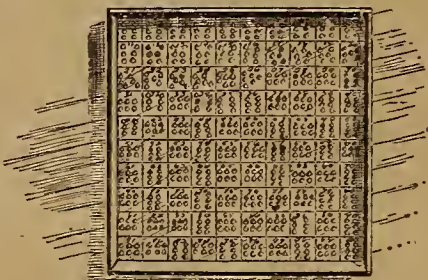
How I Test My Seed Corn

By A. E. Vandervort

I HAVE tried a number of different methods for testing seed corn, but the most convenient and satisfactory that I have found is a shallow box provided with wet sawdust to furnish the moisture and a marked cloth on which to lay the kernels.

The most convenient-sized box is one two feet square. This will accommodate one hundred ears. It is best to make it about six inches deep.

Fill a sack half full of clean sawdust and soak it for three or four hours in water. Then spread this sawdust in the bottom of the test box to the depth of about one inch. I then take a smooth brick and pack the sawdust down over the box, making it as level as possible, and being sure to have it firmly packed all around the edges.



Germination box before covering

After the kernels of corn are all in place, they are covered with two layers of cloth on which is put an inch of wet sawdust.

I then take a piece of white muslin twenty-five inches square and stretch it tight on a table so that it can be marked. I rule off on this cloth with a heavy indelible pencil one hundred squares two inches each way. These squares are numbered in rotation from left to right, beginning at the upper left-hand corner. When the ruling is finished the cloth is packed in the germination box so that it will rest firmly on the sawdust. This can best be done by pointing the tacks in the edge of the box downward, and as the tack is driven in it will draw the cloth tight over the sawdust.

The Checkered Cloth System

Of course there is no use testing any ears that are of undesirable shape or conformation, therefore the first step is to pick out those nearest to the type wanted. I lay these out in rows upon a board or upon the floor, separating each ten ears with a nail driven into the floor. Starting at the left-hand end of the row, call the first ear No. 1, then the first ear beyond the first nail will be No. 11, the one beyond the second nail No. 21, and so on.

I remove six kernels from each ear and

place them on the checkered cloth, six kernels in each square. I have found it an advantage, in placing the kernels in the box, to point the tips all in the same direction, and also to lay the kernels with germs up.

When the kernels are all in place I take a second piece of white cloth fully twenty-four inches square, moisten it, and lay it carefully over the kernels. This will hold them in place while the top layer of sawdust is being put on. I then take a third piece of cloth about 48x30 inches and lay it over the box so that the edges lap about equally. Then in this cloth I put another inch of wet sawdust and pack it over firmly, especially around the edges. When this is done I turn the edges of the cloth over the sawdust to keep it from drying out too rapidly, and place the test box where it will not be subjected to cold below a living-room temperature.

After seven days I carefully roll back the cloth containing the top layers of sawdust and carefully lift the second cloth off the kernels. Before me then is the story.

Of course we would all much prefer to use only those ears that give a perfect germination, but experience has taught that it is quite safe to use an ear four of whose kernels grow strong sprouts; or, if seed corn is scarce, I should not hesitate to use one that gave three strong sprouts and two weaker ones. But watch out for the dead ears.

HAVE you ever heard of a drug called "heroin"? It is found in some patent medicines, and is worse than morphine or opium. People taking it, soon acquire an uncontrollable habit, and cannot stop. They frequently take too much of it, and are killed. If you must take patent medicines—a very questionable practice—read the label, and if heroin is mentioned in the formula don't touch it. While we agitate against ordinary intemperance, the use of morphine, cocaine, opium, and heroin is making drug fiends by the thousand.

Ohio Credit-Plan Development

M. R. K. V. HAYMAKER of Defiance County, Ohio, whose rural-credit plan was discussed in FARM AND FIRESIDE lately, has continued his investigations with results as follows:

In the State of Ohio over twelve million dollars are now out on loan to farmers from building and loan associations. This is over sixteen per cent. of all the farm loans in the State. Only six counties do not have these associations, which are virtually farmers' land banks.

The plan is extremely well developed, is now twenty years old, and, in Mr. Haymaker's opinion, needs leadership more than any legislation.

"Who Owned the Dog?"

HERE'S a story from an Irish paper:

A somewhat hasty and generous motorist, driving at rather more than regulation speed in a West Derby lane, overtook a man and a dog. The man jumped to one side; the dog was killed. Instantly the motorist stopped, leapt from his car, pressed three sovereigns into the man's hand, and fled. The man gazed at him and then at the money. "He is very kind," he said to himself, "but I wonder who owned the dog!"

It seems as if the money ought to have gone to the man who killed the dog—if Irish dogs average as bad as American dogs.

A DOLLAR earned—that's the man working; a dollar saved—that's the dollar working.

IN THE Island of Gnam, where the climate is very hot and wet, the cornstalks are broken just below the ear when it arrives at the stage of hardening. This hastens the maturity of the grain and causes the ear to droop so that moisture does not get into the husks. A man can double or break down an acre in four hours.

Potato Profits

depend largely on how the crop is planted. Every slopped hill is a loss in time, fertilizer and soil. Every double wastes valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

IRON AGE 100 Per Cent Planters

often pay for themselves in one season on small acreage. They also plant straight, at right angles, 12 to 24 inches apart.

New angle steel frame and steel seed hopper. With or without fertilizer distributor. Ask your dealer to show you this Planter and write us for booklet, "100 Per Cent Potato Planting" and copy of Iron Age Farm and Garden News. BATEMAN MFG CO. Box 1235 Glenloch, N. J.

More CIDER

from less apples can be produced with Original Mount Gilead Cider and Grape Juice Presses than any other. This press is a

BIG MONEY MAKER

We can show you how \$1200 a year can be made in the cider business. Sizes 10 to 400 barrels daily. Hand or power. All power presses have steel beams and axles. We make cider evaporators, apple butter cookers, vinegar generators, filters, etc. Fully guaranteed. Write for Catalog. HYDRAULIC PRESS MFG. CO. 106 Lincoln Ave., Mt. Gilead, Ohio. Or Room 119 D, 39 Cortlandt St., New York, N. Y.

Empty Bags Wanted

Bags are in big demand. Don't throw them away ship to us at once. We pay freight and remit highest market price. We are big—reliable. Your chance to turn useless bags into money. We buy all kinds—Oats, Corn, Mill Feed, Mixed Feed, Bran, Gluten, Suet, Chop, Dried Grains, Malt, Cotton Seed Meal, Alfalfa, Beet Pulp, Chix Feed. St. Louis Bag & Burlap Company 329 No. Main St. St. Louis, Mo.

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Foot Scraper and Cleaner

Needed on every porch and outside doorstep. Right now is the time to sell it—A winner. C. P. Drepper, Mass., first order for 200. C. A. Johnson sold 40 in 1 1/2 days. W. W. Harpster, Pa., made \$27.45 in 4 evenings, spare time work. Write quick for terms and free sample. Postage will do. THOMAS CO., 2946 West St., Dayton, Ohio

WHITE FLAME

BURNERS make your old kerosene lamps and lanterns give a brilliant white light better than electricity or gas. Doubles your light. Saves oil. NO MANTLE TO BREAK. Guaranteed Safe and Reliable. Delights every user. Send now for complete sample postpaid 35 cts., stamps or coin. 3 for \$1. MONEY BACK IF NOT SATISFACTORY. LIVE REPRESENTATIVES WANTED. EXCLUSIVE TERRITORY. WHITE FLAME LIGHT CO., 59 Clark Bldg., Grand Rapids, Mich.

Big Entertainer 163 Parlor

Games, 310 Jokes and Riddles, 73 Tricks, 16 Card Tricks, 4 Comic Recitations, 3 Monologues, Checkers, Chess, Dominoes, Fox and Geese, 9 Men Morris. ALL 16 CENTS POST PAID. J. C. BORN, 789 SO. DEARBORN ST., DEPT. 72, CHICAGO, ILL.

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If this Hertzler & Zook Grain Drill does not satisfy you in every way, ship it back, and if we fail to return your money in full, paying freight both ways, we forfeit \$10,000 which our bankers hold to protect you—you can't lose. We make this big guarantee because we know this is the best drill on the market today—sows all kinds of grain, seed or fertilizer accurately and without waste. High, broad-tire wheels lighten draft. Extra large grain box. We also make a low down and plain seed drill.

Sold direct from factory, saves you \$20 to \$50 dealers' profits. Write for catalog and special offer.

30 DAYS' FREE TRIAL



Our Poultry Club

By special arrangement with the publishers of POULTRY HUSBANDRY, you can get this splendid paper for one year in connection with FARM AND FIRESIDE at a special reduced price. Poultry Husbandry contains splendid pointers and ideas for the raising of fine fowls. It is edited by the best authorities on poultry in America. It is chuck-full of secrets of feed-mixing, quick-growing chicks and other information of great value to everyone interested in poultry-raising.

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For One Whole Year

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Helps his wife to plan her table in busy times. Saves work and worry, saves buying so much meat, gives better satisfaction to the help. A good garden will be almost impossible in your busy life without proper tools. They cost little and save much hard work.

IRON AGE WHEEL HOES AND DRILLS

will sow, cultivate, ridge, furrow, etc., better than you can with old-fashioned tools and ten times quicker. A woman, boy or girl can do it. Can plant closer and work these hand tools while the horses rest. 38 combinations from which to choose at \$2.50 to \$12. One combined tool will do all of the work. Ask your dealer to show them and write us for booklet, "Gardening With Modern Tools" and "Iron Age Farm and Garden News" both free.

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Corn Huskers, Silo Fillers, Gas Engines, Grinders, Manure Spreaders, Feed Cutters and Wind Mills.

Send today for booklet giving full information regarding these labor-saving, money-making machines. Mailed Free

TEN STYLES OF CORD-WOOD POLE, DRAG AND LOG (Portable with Appleton Gasoline Engine)

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Phelps Great Buggy Book Is Now Ready to Mail

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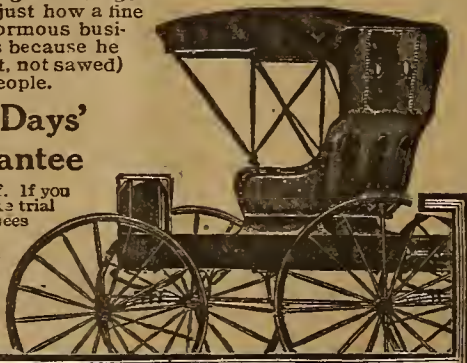
HERE is a book that will make you a master of buggy knowledge. It will be sent post paid, free. Read pages 7 to 11 and pages 24 to 32 for inside buggy making knowledge. Then no matter where you buy you will know in detail just how a fine buggy should be made. Remember, Phelps has built up an enormous business and has nearly 200,000 buggies running on American roads because he has stuck to fine second growth hickory in construction (split, not sawed) and has always made a big money saving proposition to the people.

Save \$25 to \$40 and Get 30 Days' Free Trial and Two Years' Guarantee

Get your buggy out on your own roads and try it now. Satisfy yourself. If you want a special job, Phelps will build that for you and still give you the trial and the guarantee. Phelps stays right in the factory himself. He sees the jobs done right and sent out right.

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H. C. Phelps, Pres., The Ohio Carriage Manufacturing Co. Station 27 Columbus, Ohio



Farm Wit and Wisdom

Condensed and Modified from Various Sources

Hippopotamus Farming

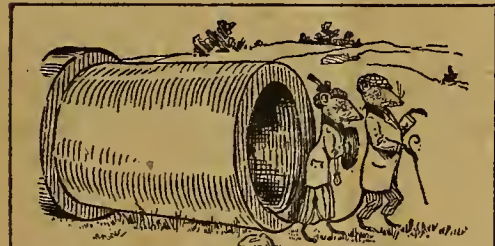
THERE is a small hippopotamus found in West Africa which weighs about five hundred pounds at maturity. A writer in the "Journal of Heredity" suggests that this animal, if domesticated in the swamps of the South, might be made to produce quantities of good meat. Hippo meat is good, and a regular article of commerce in Africa. Its lard is one of the purest of animal oils. The swamps are producing nothing except lumber kings at this time. Why not stock them with pygmy hippo? The big hippopotami would be best, but they are too apt to walk off with the line fence. Years ago it was suggested that the hippo swamps of the South could be made to produce a hundred million dollars' worth of meat a year; but the small hippo was unknown then, and there was a reluctance on the part of our farmers to trifle with animals which were likely to step on the dooryard and make a lake of it. Almost anyone would be willing to take chances with a "lake pig" weighing under a thousand pounds. We commend this new industry to the agricultural magazine writers. It can be abundantly shown that a square mile of swamp stocked with hippo would make a fortune. An acre of garden truck would make another. If the settler would plant tomato plants grafted on potato roots, so as to enable him to make two crops at the same time, affluence would be certain. There would be by-products also in the form of copperhead skins for pocketbooks, and occasional alligator hides, and lots of rattlesnake oil. Snake venom has gone up in price now, and is worth five dollars an ounce. Put all these together, with some ginseng and a dash of Belgian hare, and Mr. Rockefeller will be in second place. Hip, hip, for the hippo!

SHIP your English sparrows west. They have been found to feed upon the alfalfa-weevil which is preying on the alfalfa-fields of Utah, Wyoming and southern Idaho.

LOCUST sprouts drive many a man to hard thoughts, if nothing worse. A. J. Legg, speaking from experience, says that they may be killed, root and branch, by peeling the saplings in midsummer and letting them stand. "But," he adds, "the roots must not be broken until they are dead, or they will sprout." Has anyone any better plan?

TRAPPING is not for the wilds alone. Howard Schorly, an Iowa trapper, reports to a trapper's paper that he caught, last winter, twenty-nine skunks, fifty-five muskrats, five coons, six mink and one white weasel, of the total value of \$189. He thinks that sixty-five or seventy days would cover the time consumed; but, he adds, "the man who isn't a walker had better get a job working for his hoard."

A LITTLE note from the world of science interesting to farmers using gasoline engines on the farm or owning automobiles is that a new fuel is soon to be put on the market. A company has just been formed for the purpose of marketing liquefied natural gas contained in steel tanks. It is said this can be put on the market at about half the price of gasoline, and that it has proven quite successful in tests.



THE dry-farming soils of the West are free from the eastern and southern trouble of sourness. In both Utah and Nebraska it has been determined that the greatest need of the soils is not phosphorus, potash or lime, but nitrogen and humus. The only soil restorative needed over vast areas of this sort is the plowing down of legumes—alfalfa, sweet clover, cow-peas, field-peas or other nitrogen-gatherers and humus-makers.

IF WE select our seed-corn from the pile after husking we shall just about keep up our average of quality. But if we go through the field and select ears which grow properly on the right sort of stalks and especially if we save those which come in pairs on the same stalk—good, full-sized "twins"—we shall probably improve our strain of corn. The man who makes up his mind what sort of stalks and ears he wants may force his crop into those lines by careful and constant selection.

THE good-roads movement has resulted in the expenditure of a greater amount of money on the roads in the last year than ever before. In 1904 the total sum expended on public roads in the United States was about \$80,000,000. In 1913 it was more than \$160,000,000. The greatest progress in road-building has been made in States in which a part or all of the money is drawn from the state treasuries. The great problem from now on is to see that the money is wisely expended, without waste and without graft.

AFTER some years of experience in trying to make forest trees grow in the sand-hills of Nebraska and in western Kansas, the United States Department of Agriculture reports that green ash, honey-locust, yellow pine and red cedar are best adapted to stand the droughts. Even as far east as Neligh, Nebraska, the writer has seen groves of ash in fine condition, while box-elder, cottonwoods and maples planted alongside were merely existing and slowly dying. All the trees recommended as drought-resistant by the department are beautiful and useful trees.



"Elgin" Butter Now a National Name

THE Elgin Board of Trade has revised its rules so that the name Elgin can be applied to any butter which comes up to the requirements of the Elgin Call-Board. Formerly the Elgin district embraced the northern part of Illinois, the southern part of Wisconsin, and a few counties in Michigan. Later it was enlarged to take in Minnesota, Michigan, and sections of other States. Now the Elgin district covers the United States. "Elgin Butter," therefore, simply means butter made in the United States that comes up to the Elgin standard, which is 93 points perfect on a scale of 100. The butter offered shall be fresh churned, and must be offered for sale by a member in good standing in the Elgin Board of Trade.

THE Dairy Division of the United States Department of Agriculture, after an investigation of the Pasteurization of milk, finds that the best manner of Pasteurizing milk is at a temperature of 145° Fahrenheit, the milk being kept at that temperature for thirty minutes. This method has been found more efficient and less expensive than Pasteurization at higher temperatures. It is more economical in the use of heat and of ice in cooling the milk after Pasteurization.

Corn-Belt Dogs and Others

ONE thing which stands in the way of a solution of the dog problem is the difficulty of understanding the conditions by which our fellow men are surrounded. How can the farmers of the corn-belt and wheat-growing sections appreciate the situation in the vast regions where brokeu, rough, and hilly land affords ideal opportunity for sheep husbandry, and equally ideal facilities for the dog to devastate the flocks unknown to the sheep-owner.

Likewise, farmers in the more thinly populated sections, where perhaps no more than two or three dogs are kept per square mile, have no adequate idea of the number of hungry dogs that range the country in the thickly populated areas. The dog-and-sheep problem is a big and broad one, and must be considered just as broadly.

DR. ANDREW E. DOUGLASS of the Arizona Station calls attention to the fact that there are in existence several sun motors, which operate machinery by the sun's rays. The present obstacle to their adoption is their first cost. It is suggested that some sunny and warm State like Arizona might very properly offer a prize of \$100,000 for a practical sun motor. Doctor Douglass believes that the day is near at hand when the deserts will be irrigated by water pumped by the rays of the justly celebrated desert sun. In the Columbia they have fish wheels by means of which the river fishes itself. Why not sun wheels by which the desert will irrigate itself?

Shaved Senator or Saved Hog?

SENATOR W. S. KENYON of Iowa is pursuing the hog-cholera germ with a vengeance. He is so in earnest over the situation that he did not wait for the agricultural appropriation bill, but introduced his own bill asking for one-half million dollars to stamp out this disease. That looks like a good deal of money, but the Senator has figures to show that it is all going to be spent for pork meat, and not for pork barrel.

Hog cholera takes an annual toll of ten pounds of pork for every man, woman, and child in the country. Iowa's loss is about sixty-two pounds per person, and it is increasing. "It is all right," said Senator Kenyon, "to economize, but not to economize on the farm problems that concern the food supply of the country."

He has worked out a plan whereby the manufacture and distribution of worthless serum can be stopped and the hog-cholera campaign carried on with an absolute certainty of its success.

Among other places where he believes the Government can economize is by cutting out the Senate barber shop on the ground that a saved hog is more valuable to the country than a shaved Senator.

THERE's no use crying over spilt milk when there's ways to break the kicking cow.

BELIEVE in a brighter to-morrow, and it will seem brighter even if it isn't.

THE "Wall Street Journal" in summarizing the meeting of the Railroad Development Association recently held at Baltimore says that "there is a system of intensive farming which will double production. We can have that if we wish. It simply means to educate the farmers so they will use that part of the body that is above the neck." Very well. And while we are trying to educate ourselves up to the point of serving the financial and railway needs of the nation, may we suggest that these friends of ours do something to show themselves better fitted to meet our financial needs, and to develop the increased transportation efficiency which increased production will call for?

HARNESS properly cared for gives double service. The following method, to be used twice a year, gives splendid results:

First cleanse the harness thoroughly, using a scrub brush and plenty of water and soap. When all dirt has been removed oil is worked into it. Neatsfoot oil is best. About one gallon of oil for a set of harness is required. Use as much oil as the leather will absorb.

If one wishes to blacken and oil the harness at one operation, a small amount of ivory black can be mixed with the neatsfoot oil before applying. Harness blacking to be applied after the leather has been oiled is made of four ounces of bone black, two ounces of linseed oil, one-half ounce of sulphuric acid, two ounces of treacle, and one ounce gum arabic well mixed with one pint of vinegar.



ACME POTATO PLANTER

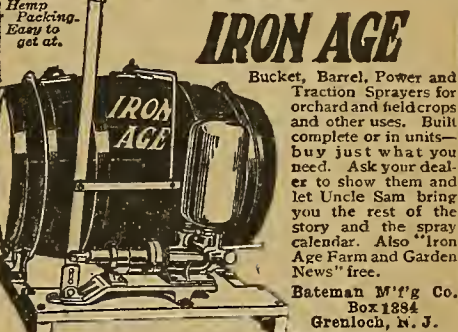
350,000 Acme Planters in use, 12,000 new users added last year, every user satisfied.

Buy from your dealer. If he can't supply, write for Free Book "The Acme of Potato Profit" and name of dealer who can supply you and also show you the ACME Compressed Air Sprayer. If no dealer is near you, we will ship direct, prepaid.

POTATO IMPLEMENT CO.
308 Front Street Traverse City, Mich.

SPRAYERS Are a Necessity and a Benefit.

They save your crop, increase the yield and improve the quality. Our Spray Calendar shows when to spray and what materials to use. Our "Spray" booklet shows 70 combinations of



Work at Home

Weaving Rugs and Carpet. NO EXPERIENCE NEEDED

\$4 A DAY Easily Made

We start men and women in a profitable business on a small investment. Write quick for prices and Loom Book.

REED MFG. CO., BOX A, SPRINGFIELD, OHIO

"Ball-Band" Rubber Footwear has Won the Friendship of 8 Million People by Wear and Service

For hard and constant wear, day in and day out, in slops and snow, you need Rubber Footwear made by men who understand your needs. Eight million satisfied users and 45,000 dealers can tell you that "Ball-Band" Rubber Footwear gives more days' wear for dollars invested—and the "cost per day's wear" test is the only true test of footwear.

"BALL BAND" Rubber Footwear

Look for the Red Ball Sign on the store window. Most dealers show it. Look for it on the goods. Strong duck, tough, high-grade rubber and extreme care in manufacture are the reasons why Boots and Arctics with the Red Ball trade-mark are cheapest in the end.

"Ball-Band" Footwear does not wear out until it has made the owner glad he bought "Ball-Band." Boots are made with either rubber or leather soles and in Knee, Storm King, Sporting and Hip lengths. If your dealer does not sell "Ball-Band," write us—we will see that you are supplied. Look for the Red Ball—if it is not on the goods you are not getting "Ball-Band" quality.

Write anyway for our Free Illustrated Booklet about "Ball-Band" Rubber Footwear

MISHAWAKA
WOOLEN MFG. CO.
305 Water St.
Mishawaka, Indiana
"The House that Pays Millions for Quality"



Here's big smoke news!

Chief Joseph
Nez Perce

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Tobacco Co.

WISE men long ago discovered they *could* smoke a pipe. They read and believed and struck real pipe joy just as soon as they fired up their first load of

PRINCE ALBERT

the national joy smoke

Men, here's tobacco that you certainly will like against any other brand you ever smoked. We tell you it is delicious to the limit in its flavor and fragrance. P. A. just puts the spirit of peace and quiet and contentment right into your system.

You argue with yourself that here's honest injun stuff that you can smoke till your smoker is tired! Just isn't a bite or a parch in this Prince Albert tobacco. Because that's cut out by a patented process owned exclusively by the R. J. Reynolds Tobacco Co. No other tobacco can be like P. A.

'Frisco men and men from Boston—from up North and down South—all get their Prince Albert just like you do—as fresh and as fragrant! Anywhere any man travels—home or abroad—he can get Prince Albert. Tippy red bags, 5c; tidy red tins, 10c; also handsome pound and half-pound humidor.

R. J. REYNOLDS TOBACCO CO., Winston-Salem, N. C.



\$840.67 Net on 1½ Acres!

is a big return, but a farmer on our line enjoyed it. He raised on the same land in one year radishes, beans, corn and hay, and had it planted in cabbage before the year was out.

Early Vegetables are Profitable!

because our mild climate, long growing season and ample rainfall cause them to mature out of season, when prices are high.

Write for illustrated booklets and magazines telling of the successes Northern men have made in Kentucky, Tennessee, Georgia, Alabama, West Florida and South Mississippi. You can do as well on these cheap lands, and live in an almost perfect climate. G. A. PARK, Gen'l Imm. and Ind'l Agent, Box B-216, Louisville & Nashville R. R., Louisville, Ky.

Raise more hay

for feed or for sale. That will not hurt your land, provided you supplement the manure with a fertilizer containing enough available

POTASH

Applications of 50 to 100 pounds of Muriate of Potash per acre should be made every spring. Even that does not supply over half the Potash taken off in a two-ton yield of hay.

Write us for prices. We sell any amount from a 200-pound bag up. Let us send you free book of fertilizer formulas and directions.

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Farm Notes

What Chance Has Your Hog?

SENATOR W. S. KENYON of Iowa has collected figures which show the relative chances of a hog's dying of cholera in the States most affected by it.

Of every 1,000 hogs in Missouri, 175 died last year of cholera; in Florida, 170; in Iowa, 160; Georgia, 165; Indiana, 150; Illinois, 140; Kansas, 120; Louisiana, 110; Alabama, 110.

This means that a hog in Missouri has less than one chance out of six of dying with hog cholera; and in Alabama and Louisiana he has about one chance out of nine.

Worth and Wages

By Ramsey Benson



ONCE upon a time a Farmer asked a Tramp to work for him.

"How much will you pay me?" inquired the Tramp.

"I will pay you what you are worth," replied the Farmer.

But the Tramp shook his head. "I can't work for less than living wages," quoth he, and went his way.

ARE you going to jam the young colt into harness, right along with the older and stronger horses? If you are you may expect galled neck and shoulders, perhaps broken wind, and a falling-off in flesh that it will take months to put back.

DR. HARVEY W. WILEY, the eminent pure-food authority, believes that the high cost of living is due first to the demand for better foods, and, second, because the purchasing medium, gold, is more abundant than ever before, and will therefore buy less. The first reason which the aforesaid Doctor Wiley assigns may also explain the reason why poorly packed and inferior foods move so slowly in the market and sell at such low figures.

The White Whirlpool

[CONTINUED FROM PAGE 4]

The case was heard in 1908 before the Interstate Commerce Commission.

Federal dairy experts and local creamery organizations were intervenors supporting the railroads. The very low rates on long hauls favored the centralization of cream and took business away from the local creameries. The federal dairy experts sided with the local creameries because the local creamery system was, in their opinion, the better system.

After listening to a legal battle lasting several months, the Interstate Commerce Commission ordered a slight adjustment of rates which still favored the centralizers. Thus railroad rates constitute the principal vertebra in the backbone of the centralizing business.

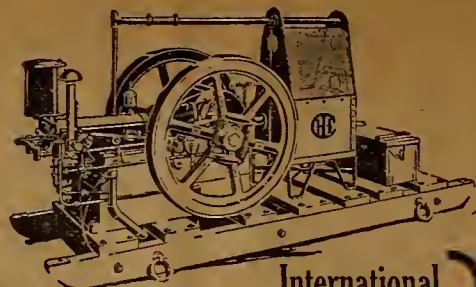
Milk rates also have much to do with the location and extent of the territory from which cities get their milk. The center of Waukesha County, Wisconsin, is twenty-five miles from Milwaukee and a hundred miles from Chicago. The price of milk in Chicago is a little over a cent a quart higher than in Milwaukee, which about makes up the difference in transportation rates. Hence as much milk is shipped to Chicago from Waukesha County as to Milwaukee, notwithstanding that Chicago is four times as far away.

Sweet cream can be profitably shipped longer distances at a profit than milk because the same bulk brings about four times as much money and hence justifies a greater common-carrier charge. Some cream for the New York City market comes a distance of seven hundred miles. All this so-called "big business" has a lesson for the individual. It means you must be sure of your rates and your markets before going into the production or manufacture of anything on a big scale.

For hauls of twenty miles or more we have to depend chiefly on the common carrier.

For shorter distances the motor truck is rapidly coming into use. It extends the area of milk production for a city without making the producer dependent on railroads and trolley lines. It is also adapted for wholesale deliveries involving a small number of stops on a long route, but for house-to-house delivery the horse is still in favor. An ice-cream dealer who uses motor trucks has found them to be economical substitutes for wagons requiring two horses, but they add to the expense of delivery when used to replace a vehicle drawn by one horse.

[TO BE CONTINUED]



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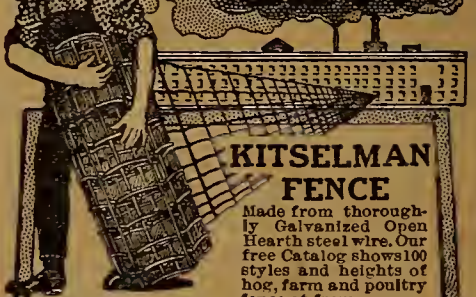
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UNCLE SAM has decided to carry the work of the agricultural colleges, the experiment stations, and the Department of Agriculture directly to the people on the farms, but not to attempt teaching it in the subsidiary schools. After years of discussion of the subject of vocational education and agricultural teaching in the schools, it has been decided, for the time being at least, that agricultural extension work shall be the limit of the activities in this direction.

The vision which filled the minds' eyes of Dolliver, of Davis, of Hays, and of Page, of a national co-operation with the school systems from the grades up to the technical colleges, for the purpose of teaching agriculture, the mechanic arts, trades, and industrial occupations, is dissipated. The Congresses in which that ambitious program had its chief strength have passed; the present Congress is not prepared to undertake anything so wide-reaching and monumental. That is the situation, right or wrong, good or bad. Whatever is going to be done will be done for the farmer on the farm, and it will be a good and useful work. Not a few of us have hoped that a wider vision, a broader sweep of imagination, a stronger grip of the construction faculty, might have united to devise a scheme which would have seemed, perhaps, to be less marked by the strictly and narrowly practical considerations, and calculated to promote growth in the largest way. But for the time, at any rate, we are to be disappointed.

Going back to the days when the wartime Congress of 1862 passed the Morrill Act for the establishment of federal co-operation with the States in the establishment and maintenance of the agricultural colleges, we find a parallel to present conditions that may dull the edge of discouragement. It took a long time for the men of imagination to bring Congress to believe that agricultural colleges could be of any use. The notion of teaching plant development, and stock-breeding, and farm sanitation, and the thousand other things in colleges, looked nothing less than ridiculous to most people in public life when it was first proposed.

NOTHING but the persistent devotion of men with a big idea carried the Morrill measure through Congress. The colleges were established, and in view of the complete vindication which their success has given to the theory of their founders it seems strange that to-day there should be determined opposition to the completion of the vocational educational system by filling in the lower strata of the structure. So far as vocational and agricultural education is concerned, we have the dome of our structure in the agricultural colleges, while the walls and foundation, that should be built in the secondary and primary schools of city and town and country, are still waiting to be erected.

Regrets that the new legislation is not all that could have been wished does not warrant refusal to recognize that much of value is provided in the Lever-Smith Bill, that will probably be law by the time this letter appears in the Lobby. As I write, the Senate is debating some details of the bill, but it has been made plain that no great widening of its scope is possible.

Secretary of Agriculture Houston and Assistant Secretary Galloway are acutely anxious to make the new measure produce real and tangible results. They both believe, not in intensive farming, but in better extensive farming. They are determined to devise machinery by which the best, the most useful and practical results of the scientific and experimental work can be carried directly to the farms. They want to make the farms the allies of the Department. To do this they hope to break through the armor of conservatism that too much isolates the farm from the rest of the community and tends to make farm methods stereotyped. They figure that five million farmers with initiative and originality, seeking rather than shunning new ways to do old things and better ways to do good things, would make up the greatest agricultural university in the world: and they are right, too.

Financing a National Farm University

By Judson C. Welliver

First, the bill provides that in the first year of its operation \$10,000 of federal money shall be given to each State to "aid in diffusing useful and practical information on agriculture and home economics." Each State which gets this money must give as much more from its own revenues. Unless the State is willing to match Uncle Sam's contribution it gets nothing.



ing; which is now accepted as the only safe plan in dealing out federal money for the furtherance of such state activities.

The money thus contributed, share and share alike, by nation and State, is to be handled, administered, and spent by the college or colleges of agriculture in the State. But this fund cannot be used for college work; not a dollar of it, directly or indirectly. The bill specifically prohibits its use for buildings, salaries, lectures, or any other activity of the college. It is to be spent in "the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise; and this work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the agricultural college."

That last provision is important, for it means that the Secretary of Agriculture is going to boss the whole business. He has no standardized plan; he is anxious to approve varying schemes and programs for different States. He wants to give a fair test to the plans of all kinds of men, for all kinds of communities and conditions; but at the bottom he has the veto power. The federal contribution is thus doubly guarded: first, by the requirement of the State's contribution; and second, by this veto power. The State must make good any loss or misapplication of any part of the fund before it can get any more of the money.

ALL this of course points to the purpose of forcing the money to be spent right on the farms, in work with the farmers. It is the inauguration of direct first-hand contact between the farmer and the field and the scientific workers. In the past the Farmers' Bulletins of the Department and the experiment stations have been tested thoroughly. They accomplished some good; but the basic trouble was that few read them. The people who most needed help were the ones who read them least. After that came the farmers' institute, which did excellent work so far as it went; but there was much of the same difficulty here. The farmer-

who most needed help was least likely to go to the institute to learn, and then afterward to apply what he had learned.

So it has been determined that the trick must be done by sending men to the individual farmer. That means, when the system shall have been perfected, at least one agent of the agricultural college in every agricultural county in the country; several of them in some counties. These agents are not to farm from roll-top desks and swivel chairs at the county-seat town, either. They are to get out among the people, learn local conditions and needs, study soils, advise farmers in person, bring down from higher-up quarters expert and technical information as it may be needed to meet particular conditions. This means that a farmer, anywhere you please, will stand just one man removed from the agricultural college, the experiment station, and the Department's experts. If he has a bad piece of land the county agent will have it analyzed, and will prescribe for it. Perhaps it needs lime, perhaps a new kind of fertilizer, perhaps a new rotation. No difference; there will be somebody higher up to give scientifically accurate advice if the county agent doesn't feel certain that he can answer the question. The county agent will know who that higher-up authority is, where he is, and how to command promptly his services.

It is not difficult to realize how useful this kind of service will be. Already many a county has had its whole agricultural system and its rural life vastly changed as a result of this practical, everyday assistance. That is what the Lever measure proposes to establish in every county in the country.

In outlining the plan it was stated that \$10,000 was to go to every State the first year. It must be added that this sum, amounting to \$480,000 for the 48 States, is

to be increased by \$600,000 a year for each year until the total distributed shall be \$3,000,000 a year of federal money, matched by \$3,000,000 more of state money. That will probably prove only a beginning.

THE first \$10,000 goes to each State alike, regardless of population or any other condition. Rhode Island, with very few of the total population farmers, will get it just the same as Ohio or Texas. But after that first \$10,000 the additional federal appropriations are to be distributed in the ratio which the total rural population of each State bears to the rural population of the whole country. So after the first \$10,000 Rhode Island would get a mighty small share, and Ohio or Texas a very big one.

The system of teaching by doing, of having the teachers go to his pupils, of making the field, the orchard, the farm establishment, into your classroom, is not new in this country; in Europe it is very old, and very successful. It is one of the instrumentalities that have enabled Europe, despite its immense population, to so nearly feed itself. Dr. Seaman A. Knapp introduced it extensively in the South, and in that section the people have taken to it like ducks to water. Indeed, there is no longer doubt that it is largely responsible for a slow revolution in agricultural methods that is going on in that section, with the result of better farming and a greater diversification of crops. Here are some figures showing the per cent. of increase in the corn crop when raised under demonstration methods: that is, when farmers took the advice and direction freely given them:

Texas, 47; Oklahoma, 98; Arkansas, 62; Mississippi, 126; Alabama, 156; Georgia, 157; South Carolina, 132; North Carolina, 134; Virginia, 75.

That such results as these can be secured, and have been secured, by dint of these methods is not to be doubted. But it is not intended that the county demonstrator, or agent, or whatever he is to be called, shall devote himself and his organization solely to securing larger crops. His work will be a much larger one, for he will be expected to aid in the marketing, standardizing, grading, and proper transportation of farm products, as well as in all other factors of farm work.



"I dunno whether you be a plumb idiot, or whether you're trying to make a fool of me"

Beriah Sallerby's Housekeeper

By Arthur Chamberlain

Illustration by Blanche Chloe Grant

THE mild-looking little woman who came into Laban Rawter's store seemed intent upon purchases, but neither Rawter, white-aproned and important, nor any of the men gathered around the counter—customers, the most of them, by courtesy rather than in fact—paid the slightest attention to her entrance.

Hesitating for a moment she caught the storekeeper's voice, raised above the general hum:

"I says to Sallerby—'Well,' I says, 'Beriah, if so be it you want to post that notice, go ahead; you may as well welcome, I ain't hindering ye; but I guess it's liable to get some dusty an' fly-specked 'fore anything comes ou' t,' says I, for I'm one to speak my mind, let alone what Sallerby buys wouldn't keep a cat in rubbers."

There was a unanimous buzz of assent from the group before the counter.

Standing before the notice, which she had reached by this time, the woman read it slowly through. It set forth that:

Beriah Sallerby wants a woman who can keep house and her temper; cook three plain meals a day, and sew on buttons that will stay put. None under forty need apply. Wages by agreement.

She turned to the storekeeper. "Can you give me Mr. Sallerby's address?" she inquired pleasantly.

"Meaning where he lives, ma'am? Thought everybody—but there! You're a stranger in these parts, I see; if you wa'n't you wouldn't be for going near Beriah Sallerby. Take a friend's advice, ma'am, and keep away. He's snapped the head off o' me and nigh everybody in town, and—"

"Now, it seems to me you've a pretty good head, sir," interrupted the little woman with just the suspicion of a smile, amid the haw-haws of the company.

The storekeeper grinned. "I'll take that as a compliment, ma'am! Now, be you set on going around to Sallerby's?"

The woman merely nodded.

"It's about a quarter of a mile down the road, first right-hand turning," the storekeeper went on in answer to the nod. "Tumble-down shack—I wouldn't have the face to call it a house."

"He writes a good, clear hand, anyway," replied the woman. "Now, if I can get a spool of thread and a paper of needles, assorted sizes, I'll go along, thanking you for your information."

Her purchases made, the woman started down the road. "Just you see to it, Tryphosa Manners," she murmured to herself, "that you don't get put out of conceit with a good place 'long of listening to other folks' opinions. Not but what it was well meant and civil of him," she concluded, carefully appreciative.

The Sallerby house, as she approached it, showed gray and weather-beaten in the late afternoon light; not a few of the shingles were gone from roof and walls.

"Does look a mite out of repair," she admitted to herself, going up the garden path, "but, my! Those shingles in the roof look like brown velvet where the sun strikes 'em!"

An unkempt figure stood in the porch as she came up. "What you want round here?" a somewhat truculent voice demanded.

"I just saw your notice at the store, sir," replied the woman quietly. "My name's Tryphosa Manners, and I thought maybe I'd suit as housekeeper."

"Set down," growled the man, indicating a clumsy chair, while he himself leaned back in the shadow. "Know how to keep house?"

"Well—I've had some years' experience," replied Miss Manners modestly.

"And your temper?" persisted Sallerby.

"I'm thinking it's best not to have a temper, then you won't be bothered with keeping it."

"Can you cook?"

"Never heard of anybody being the worse for my victuals yet."

"Your buttons stay put?"

"Long's the thread lasts—and I calculate to use good thread."

"Um." Sallerby paused, considering. "I ain't paying no fancy wages!" he broke out suddenly.

"We won't talk about wages yet awhile, if you please," Miss Manners' tone was gentle but decisive. "Try me a week and see how you like me; then we'll talk about wages."

Sallerby looked at her with a slight expression of astonishment. "I dunno whether you be a plumb idiot, or whether

you're trying to make a fool of me," he rejoined dryly, attempting to be indifferent, "but you can come."

The following day was devoted to washing and ironing, followed by days of strenuous cleaning, but Beriah Sallerby seemed to pay but little attention to his newly acquired housekeeper or her work. He came to his meals and went away from them in grim silence, broken only by a few necessary directions. The house once cleaned, however, he appeared at the supper table with an armful of clothing which he dumped unceremoniously upon the floor.

"Need mending—and buttons," he explained concisely and, having swallowed his supper, strode out of doors.

Next morning a small, neat pile of clothing stood at Sallerby's plate on the breakfast table. He eyed it suspiciously.

"That ain't half what I gave you last night!" he growled resentfully.

Across the table Miss Manners raised her eyes, looking meekly but squarely into her employer's face.

"No, it's about quarter of 'em," she replied, mildly deliberate. "I mended enough to keep you going for a week, and then it was eleven o'clock, so I quit. Can't do my duty to you nor myself if I sit up late."

"See here!" stormed her employer. "When I start to do anything, I calculate to keep at it till it's done. I ain't a quitter, and I won't have folks work for me—Now, what you bobbing your head at me for, I'd like to know?" he ended wrathfully.

"'Cause I know we both feel the same way about it," rejoined the housekeeper in unruffled tones. "I've always wanted to put things through with a rush, same's you do, and 'twas a real cross for me to go to bed last night and leave all that mending. But I have come to learn that if you do every job with a rush there's bound to be a lazy streak between rushes, and that streak'll go on widening and widening till there's no rush left."

"Be you a-hinting—" broke in Sallerby roughly, but she checked him with a gesture and went on soothingly:

"'Course when we get beat out doing anything, just 'cause we have rushed it, we naturally hate it, and so we put off starting in on the next job. Take shingling: if you feel you've got to shingle nip and tuck till it's done, you kind of hold back; but stick in a few shingles every day, and—why, you're shingled 'fore you know it!"

"Shiftless!" grunted Sallerby.

"Maybe it looks so to you," rejoined Miss Manners, "but it ain't half so shiftless as not shingling at all. Here's a shirt with all the buttons on it, Mr. Sallerby, and this suit—my, it looks almost too spruce to work round in, now it's mended up!"

A while before suppertime the housekeeper's attention was attracted by the sound of hammering. She paused a moment, listening. "Well, I ain't surprised—not one mite!" she commented to herself, going on with her work.

Sallerby appeared at the supper table, flushed and evidently somewhat tired, but without his usual grimness. He ate hastily and pushed away from the table. "Cooking's half decent anyway!" he muttered with the abashed air of a man forced into a reluctant concession. "Guess I may's well g' out—"

"Oh, you let that shingling go till to-morrow!" advised Miss Manners placidly.

Her employer turned upon her. "Shingling? Who said anything 'bout shingling?" he demanded.

"I did, sir." The housekeeper drained her teacup. "You were at it for more'n an hour 'fore supper; you're het up and tired. There's a good two hours' more work on that shingling, and you'll have to scamp it if you're going to be through 'fore dark. And there's the chores besides."

Her employer paused irresolutely, but finally sat down. "What d'you know 'bout shingling?" he demanded.

"Nothing," responded Miss Manners promptly; "but I know when a man's done enough work for the time being. Now, you sit right here by the window—you won't be in my way one mite—and here is the Becksfield 'Weekly Trumpet.'"

"Where'd you get that rag of a paper?" demanded Sallerby.

"I bought it," replied Miss Manners in unabashed tones. "Always calculate to take the local paper and keep up with what's going on."

"I ain't had that paper in my house, not sence Anson Trafford—he's the editor—got so stuck up he wouldn't take garden truck in pay for subscriptions. Said he'd got to have cash!"

"Most folks do seem to have to have cash," commented the housekeeper, laying the "Trumpet" on the table at her employer's elbow.

A few minutes later she was startled by a snort of disgust, and looking up she saw her companion glaring at the "Trumpet," which he held with both hands at arms' length.

"You just listen to this!" he cried angrily. "We learned through a visit to Laban Rawter's ably conducted emporium that a certain townsman, a widower of some twenty years standing, has been—no, not advertising for a housekeeper, although we gather from a somewhat erratic notice that a housekeeper is what he desires. It is long since we have numbered the gentleman among our subscribers, and the method of announcement which he has chosen emphasizes the frugality that foregoes the TRUMPET. There! What d'ye think of that?"

"I'm sure I'd no idea you were a widower, sir; not in the least!" responded the housekeeper, shaking her head. "How your wife must have grieved at leaving you, and how you must have mourned—"

"Trafford'll apologize, or I'll—I'm going straight over to his office," declared Sallerby, making for the door.

"Well, maybe he'll apologize and maybe he won't," commented Miss Manners. "Editors are dreadfully uppity, some of 'em. I heard of an editor out West who shot a man just 'cause he called him a spavined cayuse,—which of course he wasn't, being's a cayuse is a horse,—but the 'Trumpet's' office is shut up now for the day, and you ain't going to a man's house to row him with his wife setting by and all the children looking on, being's you're a gentleman and know what's good breeding."

Sallerby subsided into his chair. "First thing to-morrow morning, then: after breakfast."

"—and the chores, and the shingling," amended Miss Manners meditatively.

Breakfast over on the following morning, Sallerby rose from the table with an extra swagger. "Now for that smart Alec of an editor!" he announced defiantly.

"You're not counting on my doing the chores and the shingling, are you, sir?" inquired Miss Manners suggestively.

"Guess they can staud over till I've given Anson Trafford a piece of my mind!" fumed Sallerby, striding away.

Some two hours later the housekeeper noted a cautious step in the rear of the house, and looking out of the kitchen window noted her employer, who was going the round of the belated chores in a rather gingerly manner.

"There'll be time to do a good stent on that shingling 'fore dinner, Mr. Sallerby," she greeted him from the window.

He turned around with a little start. "Oh, yes; 'course!" he agreed hastily; and the housekeeper, going back to her work, heard before long the sharp tap-tap of driven nails.

Dinner was eaten in almost total silence, and Sallerby pushed away from the table. "Shingling ain't quite done," he murmured in covert explanation of his haste.

"Now, won't it be uice to have that shingling all done and over with, being's it's Saturday, too; and you'll have all Sunday to rest in?" commented Miss Manners cheerfully as her employer disappeared, making little guttural sounds that might have indicated agreement with his housekeeper's sentiments—or the reverse.

The supper that greeted Sallerby when he came in after several hours of strenuous shingling was a brilliant contrast to the cup, mug, and tin-pan snack that had long passed for a meal with him in his "unhouse-keepered" days: an abundance of clean dishes with a slice of ham sizzling in the largest one, flanked by hot muffins and baked apples; with coffee, strong, brown and fragrant, in a well-scoured coffee pot.

It was some time before Sallerby pushed back his chair. "Guess I had a coming appetite," he observed with a touch of awkwardness. "Dunno's I ever ate better muffins, or tasted better coffee." He went on hurriedly, stopping with marked abruptness. "Well, the shingling's done," he announced suddenly.

"Now, if that isn't a good job over with!" rejoined Miss Manners, pleasantly commendatory.

Sallerby slowly cleared his throat. "You—you ain't asking me how I came out with Trafford?" he ventured suggestively.

[CONTINUED ON PAGE 24]



A Business Proposition

By Alice Elizabeth Wells

"I AM going to sell off every chicken on the place," remarked a calling neighbor yesterday.

"You don't mean it, and you such a poultry crank!" exclaimed the other.

"Yes, I do mean it; they are eating their heads off over and over again, and the way feed prices are soaring we just cannot afford to keep them over winter."

"Are you sure they don't pay for themselves and more; how do you know?"

"Why, I just feel it in my bones, every time a dollar goes out for wheat or corn, especially when eggs are scarce as of late."

We all laughed, but I donned my thinking cap right then and there and have been wearing it ever since, for I'm bound to confess I had been groaning over high prices myself, and was keen to hear all our plucky neighbor had to say on the subject.

"Why not keep an account with your flock for a while, say two or three months, before going out of the business?" she went on. "I do, and shall keep my hens at all hazards."

And then she told us that her account book had a page each for not only poultry, but calves, pigs, cows, bees, orchard, and garden. In answer to our interested queries as to how she managed she said:

"I count my chickens and allow a big handful of corn for each, measured in a peck bucket, the measuring done once for all. In this way it is easy to keep track of bushels used. Then a sack of bran for their special use is kept on hand for morning mash, and charged to their account. Then I keep a record of eggs brought in and chickens killed for home use as well as those sold, and credit them with current price. I charge them up with the work I do for them, and am

of a paying business proposition and no more disagreeable than sweeping stores, waiting on unpleasant customers, or dealing with unscrupulous business men. Keeping a book account with flocks and herds, field and pastures, adds to the dignity of rural life and to our own self-respect. I venture to add that one traveling through the country with the idea in view of measuring comparative prosperity of individual farm-owners can quite accurately judge by environment just who make a profession of their business and just who, in a happy-go-lucky manner, follow along the line of least resistance, rejoicing in good years and good luck and repining when clouds refuse to shed moisture and hens refuse to lay.

Cooking in the Furnace

By Maude E. S. Hymers

FOR a few months in the year the furnace evinces such a rapacious appetite for fuel that the housewife to whom economy is a necessity almost grudges the extra amount required to prepare the family meals. Because of this, many resourceful housekeepers have compelled the greedy furnace to cook the meals as well as heat the house.

This is not so difficult as it may sound, and, aside from the question of economy, there are times when it is convenient to know that an appetizing hot meal is preparing in the furnace without the expenditure of extra time and fuel to keep another fire going.

The following skeleton menus are given as suggestions of what may be done in the way of furnace cookery, all of the dishes mentioned being successfully cooked in a hot-air furnace, burning either hard coal or coke. Add to any skeleton menu selected the usual staples and relishes already on hand, and a satisfactory meal will result with little labor and a noticeable saving of fuel.

Baked potatoes; broiled steak; coffee.
Stuffed potatoes with cheese; bacon; caramel coffee.
Escalloped potatoes; hot rolls; cocoa.
Cheese puffs; baked sweet apples; tea.
Sweet potatoes; ham and eggs; coffee.
Hot baked beans; brown bread; tea.
Toast; dropped eggs; coffee.
Club sandwiches; hashed browned potatoes; tea or coffee.
Baked potatoes; creamed codfish; cocoa.
Baked hash; johnnycake; cereal; coffee.

The first requisite to successful furnace cookery is a broad and level ledge in the coal door, which serves as an oven. In furnaces where this ledge is set on a slant it will be necessary to level it. This may be done with a wedge-shaped piece of iron laid with its broad side next the fire, and a sheet of heavy tin or iron cut to fit the space, which will provide the required shelf. If necessary to have the tinner make this to order, by all means have the edge next the fire made to stand up several inches. This will serve as a screen while preventing articles from sliding upon the coals, as did the first potatoes I attempted to bake in a furnace.

It should be remembered also that dishes requiring long, slow baking should never be attempted on days so cold that the furnace must be run to its full capacity. A steady fire with closed drafts is necessary for beans, brown bread, etc., but for baked potatoes and most of the other articles mentioned a quick, hot fire is better.

The dishes used for cooking should be entirely of metal, without wooden handles or knobs to char from the heat. A tall, narrow pail with cover is good for heating water and making coffee, with

the regulation beau pot, or a gallon crock with tight-fitting cover for the beans, etc.

The brown bread should be steamed, which is best done by putting the dough in pound baking-powder cans, setting these in a crock nearly full of water and covering all closely.

Better than the regulation steak broiler is one of the old-fashioned wire-mesh corn poppers, the basket holding the steak without danger of slipping and the long handle affording protection for one's hands. A prop to support the end of the popper may often be improvised with the poker.

The bacon may be broiled, although so much of the fat is lost that it is better to fry it. This may be done on the ledge if the fire is hot enough, otherwise the pan may be set directly on the coals by raking them together in a pyramid.

Eggs may be boiled, dropped, or fried; ham either boiled, fried, or broiled. Cold rolls and johnnycake may be moistened and heated in a covered pan; toast made in the corn popper or with a long-handled fork. For club sandwiches put toast together with hot bacon on one slice, cold chicken or veal on another, and a lettuce leaf on a third. For cheese puffs toast circles of bread, cover with a mixture of beaten egg and grated cheese, and return to the fire long enough to melt the cheese and set the egg. For caramel coffee have sugar cooked to a caramel, diluted sufficiently to form a thick syrup, and use a teaspoonful or more to each cup of boiling water, with cream.

For escalloped potatoes choose a long narrow pan which will not set too closely to the fire; or a round pan may be used by passing a strip of asbestos around it and fastening with clips.

Indeed, the housewife who cares to do so may greatly increase the possibilities of her furnace oven by having made one or more asbestos covers for her pans. Take a piece of sheet asbestos either round or square, as best suits the dishes used, and fold it over on four sides so as to form a hood to set down closely over the pan. Fasten the folds with paper clips, and provide handles by thrusting a small brass screw hook through the center of the top and screwing it into a cork beneath.

My First Hundred!

By A. W.

I AM a salary-earner, and I live in a small town. Household expenses and clothes take every cent I make. Desiring a bank-account, I decided I must earn the money outside. I was about fourteen months saving the first hundred dollars.

My first twenty dollars came unexpectedly. By chance I overheard a man say he was contemplating buying a lot in a certain district. I sent his name to the company selling lots there. The man purchased one four-hundred-dollar lot, and I received five per cent. commission. This I put in a savings bank at four per cent. interest.

I took a magazine agency from a well-known house, and during the year, along with my other work, I had placed eighteen dollars in the bank from magazine subscriptions. This was pleasant work, as it was a simple matter to induce people to subscribe for good magazines.

One periodical sent me a six-dollar check for three anecdotes, another surprise. That started me writing for the magazines occasionally.

A letter dealing with my experience with advertisements brought a five-dollar check. Other letters and suggestions about advertisements left me eight dollars clear. Two prizes of five dollars each and two of one dollar each from magazine contests were twelve dollars more for my bank-account.

I began saving in September. The following March I drew out almost all I had in the bank at that time and put in a tennis court. Charging five cents per racket and overseeing the game after working hours, by October I had put the thirty-five dollars back into the bank and fifteen dollars besides. And my court would bring clear money for several seasons to come.

The three hot months I cut out candies, picture shows, etc., and thus put eight dollars more in the bank.

Several articles and recipes accepted between March and September cleared me eight dollars more.

My kodak, which I put in service on Sunday outings, and flashlights brought five dollars and fifty cents.

The kodak money, article money, tennis money and magazine money were kept in separate boxes until it amounted to a dollar or more, then it was sent to the bank.

After the first one hundred dollars, the other increase seems to come more easily, as past experience helps and the interest on the money compounds. Although I have had opportunity to place the money at higher interest, so long as I am making a salary I shall leave it where I feel it is safe.

Along the Printed Trail

By Lilly M. Johnson

THE books a girl should know are those which show that life with its trials, sweetnesss, and sorrows means the attaining of final triumph for those who truly strive. There are volumes which tell of the world's history; pages which lead through the land of fairies and romance; verses noteworthy by reason of beauty of diction and loftiness of thought. There are many which claim recognition: some because they have been loved through many years, some because they are mirrors of the present time.

When I was a little girl the twilight meant a snuggling in mother's arms and listening to a low voice telling tales of Bible times, of the age of chivalry, of fairyland and the everyday. These hours were the foundation of a lifelong pleasure, for it was thus I learned to love books. I do not remember how I mastered the alphabet but my memory distinctly recalls how I learned to read. It was from a now dog-eared copy of Hans Andersen's Fairy Tales, and I am morally certain that I progressed more quickly than had I been studying a plain everyday primer, for there was always something luring me—the rest of the story awaiting a vitally interested explorer.

Learning my reading lesson was made interesting, an experience which is every child's birthright. No one has a right to insist that a child be forced to read dull or uninteresting pages. While the world teems with the entertainingly instructive I can see neither rhyme nor reason in forcing unpleasant doses upon a reluctant victim.

Wanted: Normal People with Normal Ideas

Certain books are poison, though they are sometimes labeled "Sunday-school gems." The Elsie Dinsmore and kindred specimens belong to this list, for they praise a cant no sane person can admire. What the world needs are normal people with normal ideas.

"Little Women" and the other Louisa May Alcott books are life studies so interesting that you live with them. The "Pepper" stories are another glimpse of real folks. Kate Douglas Wiggin's tales are a perpetual delight.

If one wishes to wander amid historic scenes and grow to know the great ones of history, the way is open through the Iliad, Scottish Chiefs, the Mühlbach romances, and Ainsworth's tales of Merrie England. The story of the early struggle for Christian or Mussulman control of the Near East is spread before you in Lew Wallace's "Prince of India," as fine a work as his more famous "Ben Hur" or tale of Mexico's conquest in "The Fair God." You can live amid the glories of ancient Rome in "Quo Vadis," or know the true inwardness of Egypt's rise and gradual decay through Jeremiah Curtin's translation of Glovatsky's "The Pharaoh and the Priest."

You can understand the Middle Ages through reading that marvelously interesting book "The Cloister and the Hearth," and become acquainted with early Victorian England through "John Halifax, Gentleman." Scott will carry you back to chivalry and later stirring times, while Dickens and Thackeray open to your fascinated vision a gallery of those you can laugh and weep with, love and hate. For our own country "Hugh Wynne" reveals the Revolutionary days; Cooper's "Leather Stocking Tales" a still earlier day; while the Civil War epic days are partially revealed in "The Crisis" and its rival comrades.

You can travel through Holland with "Hans Brinker," while Ouida's "A Dog of Flanders" and "Old Nuremberg Stove" reveal bits of quaint Europe.

Sunshine Traps

Frances Hodgson Burnett's stories reveal romance in childish lives and the worth of sunny optimism. Myrtle Reed's stories are "real life made into a fairy tale," as an admirer expresses it; and surely it is good for us to be told sometimes that life can be changed from the humdrum to the Wished-for Land. "Mrs. Wiggs of the Cabbage Patch" and "Lovey Mary" give glimpses into what we often think are forlorn corners, but which are in reality sunshine catchers and distributors.

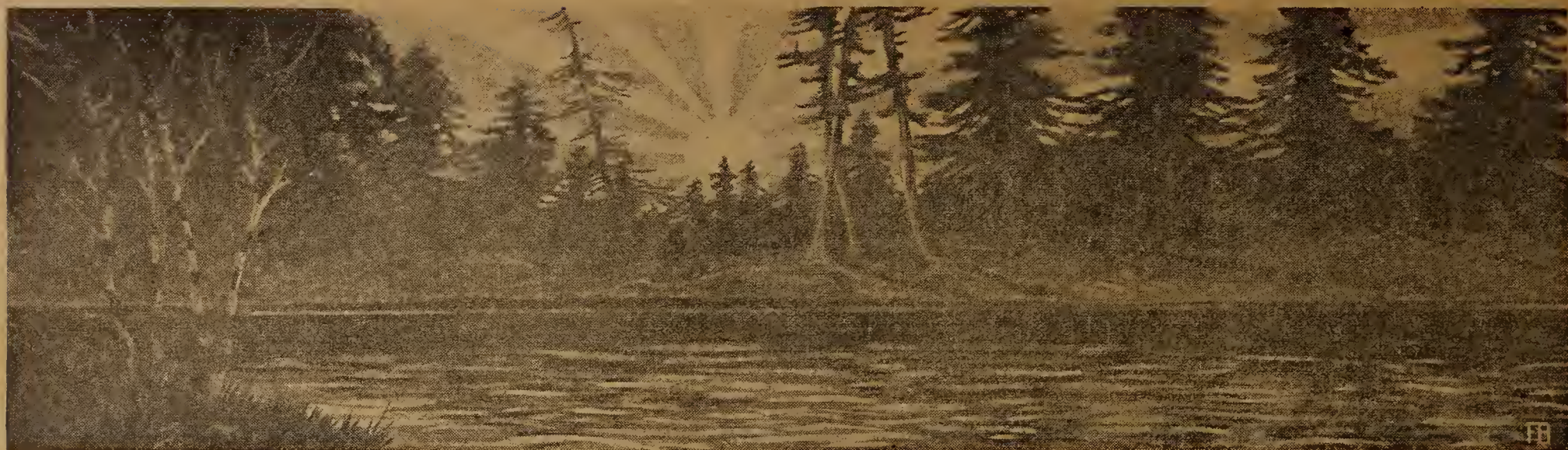
Oh, there are many, many books which lead us through the realms of delight, widening our thoughts, bringing new ideals, revealing the good within and about us, and making us know we can be poor and yet rich, that it is not necessary to scour the seas, tread the wilds, or search the universe to find "our" place. Through such books we learn that love, duty, and romance have existed from the beginning; have lived in the cot and dwelt in the palace. Life is worth while everywhere and all the time; for, after all, each lives within a home, and "East, west, home's best," if we make it so by invoking the companionship of books.



sure, taking account of the business, year in and year out, I receive fair wages for labor."

My neighbors went home, and I have been moralizing ever since. Henceforth I am determined to know just "where I am at," not only with my beloved flock of Plymouth Rocks but with Mollie, the Jersey cow, my strawberry patch and pet pigs. Milk shall be measured as strained, and butter weighed as churned, and prices and amount recorded. It is easy to set up a straw man to fight, and easy to get frantic when, as in Kansas this year, drought, hot winds, and birds have decimated crops of all kinds; but it surely doesn't pay to give up the battle without investigation of facts. There is but one way to know what facts are, and that is to keep accurate account with every producing factor on the place. Credit such with every atom of profit, and charge them with cash expended, labor performed, and rent for territory used. In this way our business is elevated to a profession.

I believe no feature of farm life would appeal more forcibly to our girls and boys than this. Let them know that slopping pigs, cleaning poultry houses, or spraying fruit trees are only details



Are You Happy?—By Bolton Hall

DON'T comfort yourself with the idea that no one is happy, and that therefore you cannot expect happiness for yourself. It is true that no one is without difficulties, "troubles," as we call them, unless he is a sheep, but difficulties do not necessarily make us unhappy. This must even the heathen understand; the Stoic, the Hindu, and the poor Indian in their various methods knew how "beneath the frowns of Fortune to preserve the mind unshaken and master of itself." To be without difficulties would mean that we should lose the opportunities to gain strength. The hothouse plant that is protected and fed has become the symbol of weakness; the storm-battered oak the symbol of strength. Notwithstanding the battering, many persons are entirely and continuously happy; if you do not recognize them it is only because, as Whitman says:

The love is to the lover and comes back most to him—
And no man understands any greatness or goodness
But his own, or the indication of his own.

After all, if the Power that runs the world is a loving Power, as all religions teach, happiness must be natural, and its only condition must be that we should fit well into the plan of the world.

Carlyle says, "What have you ever done that you should not be unhappy?" We may put it, "What do you do to be happy?" How do you agree with what-ever is loving in the world?

Most of us are busy looking out for ourselves; that is, we are trying to push what we think are our individual interests with little regard to others. To gratify a whim we disregard other people's desires and needs, or, in order to have our own way, we make other people unhappy. We are thinking of our own interests or, at best, of the interests of our own family, and are willing to sacrifice everyone else's good for what we think will be good for ourselves or for our larger selves, our families.

Avoid the Needless Struggle

We worry lest things should not go our way. We are angry with those who are also looking out only for their separate interests, regardless of us and others. Like a man who persists in walking on the wrong side of the crowded footpath we oppose everyone and run up against everyone; we practically set ourselves to oppose the whole world.

The result can be only irritation, needless struggle, and weariness.

Yet we think that if we could succeed in that opposition and have our own way it would make us happy. Undoubtedly there is a satisfaction in gaining our own ends; but if they are gained at the cost of antagonism toward others, happiness does not come, for we have that far ceased to be a well-adjusted working part of the universal machine. We know ourselves that to let our children always have their own way, without respect to others, is to make them the most wretched of beings, "spoiled children." Still we think that if we ourselves had our own way we should be happy. How could anyone be happy that way? No man was ever strong enough to make all other persons obey his wishes; there must always be opposition. He may appear to succeed in a measure and for a time, but it must end in failure and disappointment. No one need expect that the world and all the persons in it will be molded to suit his wishes. Even if he master the great things the little things will evade and conquer him.

The oldest wisdom of the world announces that to be given over to the devices and desires of our own hearts is the most terrible of punishments.

My people would not hearken to My voice,
And Israel would none of Me:
So I gave them up to their own hearts' lust,
And they have walked in their own counsels.

It is ludicrous then for anyone to try to live to the full or to hope to live a perfect life without regard to the good of others. He may subdue kingdoms, but at last, like Napoleon, two days of rain and an unexpected hidden road destroy his schemes. He may plan business campaigns with supreme genius, as Harriman did in his effort to control the railroads, but when he has almost accomplished his designs a little valve in his heart gives out. He may reach the pinnacle of political power by well-considered ways, but his ambitions are brought to naught, as Mr. Blaine's were, by the phrase of a well-meaning friend—"Rum, Romanism, and Rebellion." Or it may be that the bullet of a half-crazy fool will interfere with his plans, but always something beyond his control shows us that his rule is limited.

Think a moment: if the world is constructed on any plan it must be constructed on a plan for the good of all, for we cannot conceive of Supreme Love and Intelligence constructing a plan that would work good to some and injury to others. Experience teaches us

that the world is so made that we cannot do the smallest thing either good or bad without affecting other people; ay, verily, that what we are, regardless of what we do, makes or mars the happiness of others.

It is common sense as well as the teaching of every religion that he who tries to live for himself narrows his life and misses his aim.

If one perfects an invention or makes money in fair trade, he can profit by it only in so far as others use it and get the benefit of it. If, on the other hand, he overreaches others he will overreach himself in the end.

"The theft is to the thief and comes back most to him."

The wicked man—the man who does what is unloving—is in truth the fool.

The path to happiness, therefore, lies only one way—in work for others. That is the sovereign cure for all depression and discouragement. "Seekest thou great things for thyself? Seek them not."

One Story from a Through-the-Week Church—By Mary B. Bryan

IMUST tell you about it now that it is over successfully. Mrs. Parsons, our president, made the suggestion, and she made it only because she was at her wit's end. You see, we of the Ladies' Guild had decided that we must make our church a through-the-week infirmity to socialize our community. To do so we organized a series of entertainments. This one was to take place on Washington's birthday. No speaker was to be had; that is, none that would surely make the evening entertaining. The children had served us so often that it was fair they and their teachers and their parents should have a change. So Mrs. Parsons proposed an exhibition of curios.

"Where from?" demanded Miss Hetty Prior, who could be counted to shy at any and every suggestion. A member like that is very useful because her chronic objections make all the rest of us determined to prove her wrong. I believe she has won more successes for us by prophesying failure than she could any other way. So the minute she told Mrs. Parsons she didn't believe there was anything in the place worth coming to see we were all sure that there was no end of stuff tucked away in attics and closets that could be handled out, and show Miss Prior that cities didn't own all there is.

We arranged that committees should canvass every house in our township, which is pretty well spread out along a river and among hills. We saw to it that Carol Millbank, who is just back from boarding school, and so hasn't run up against Hetty much, should canvass in her district, and then we went home to hunt through all our boxes and out of the way corners.

Those committees had great fun. Of course every householder met them with the assurance that she had nothing fit to be seen. Then after a while it would come out that she had been through her things just as we had, and was dying to show them. One treasure would lead to another, and when we wanted some-

thing the owner had discarded as not of enough interest she was as pleased as we. But the best of all was Carol's encounter with Miss Prior. It was a bitter cold day, and Hetty lives in the oldest house around here, with a stone chimney that takes up most of the inside of it, and a narrow entrance that tumbles you right into the sitting-room. Well, when Hetty opened the door a bit Carol stepped right in, and on into the sitting-room, sure that she was expected, and that Miss Hetty, as a member of the Guild, would have her things all out, ready.

"What a lovely spinet!" she cried. "Why, Miss Hetty, no one ever told me you had it! Where did it come from?"

"From the pantry," said Miss Hetty grimly. "It's so cold, everything freezes, and I moved that out here to-day to put things on till the weather gets decent again."

Carol shut her lips tightly over a horrified exclamation at the word "pantry," and said instead:

"How lucky that you have it out, so we can take it for the exhibit without inconveniencing you!"

Miss Hetty stared. "For the exhibit? Why?"

"It's very old," explained Carol.

"Humph, of course it's old. Everything I've got is old."

"And it's most unusual. I've seen several in museums, but none as quaint as this."

"That so?" inquired Miss Hetty, seemingly by no means impressed. "How foolish some folks are!"

However, she let Carol have the spinet, and a Bible box, which she emptied of garden seeds, and a pewter bowl that held dried beans, and some other things that were as good as anything in the show. Her name as lender was on every one. She told Mrs. Parsons it was queer nobody had thought of this plan before, and perhaps now people would begin to take care of their valuables.

We Borrowed Two Big Boys to Help

So many things were brought that we had to use two rooms, and we borrowed the two biggest boys from the school to help us. One is a Jew, the other an Italian. They were just as interested as we were, and it was the Jew who suggested that we hang an English flag over one archway and in that room put all the mementos of the days before Yorktown. Over the other arch he hung the great school flag, and in that room was everything that dated after the Revolution.

In the first room was the table of Indian curios found in fields round about. The children lingered long here, and then slipped across the room to the Revolutionary corner, where they could handle a sword that had seen service in the Battle of Long Island.

In a case lent us by the storekeeper, whose candy meanwhile was kept in boxes, was the original town record with the deed from the Indians, and the pewter communion service of Colonial days, and carvings from a long-vanished church building. There were flax and wool wheels, carders and hutchers, and queer iron kitchen utensils that had been tucked in attic and barn with the coming of stoves. The old spinet attracted everyone, and I heard a man on whom we had kept our eyes, suspecting a dealer, suggesting to Miss Prior that she might sell it to advantage.

"Certainly not," returned Hetty crisply, and loud enough to be heard by the room. "That spinet was brought from England for my great-great-grandmother, and I am intending to leave it to my grand-niece."

Carol wouldn't meet my eye. I knew she was thinking of Miss Prior's pantry.

Changes and Surprises on Every Hand

Beyond the stars and stripes the walls were gayer, for here hung samplers and baskets of flowers in thin water-color; quilts of wonderful piecing; linen and woolen sheets, hand-spun and hand-woven; funny slippers and buckles from Grandmother's chest; and bits of china and glass that had survived the years. Here too were the offerings of our new citizens. The Jewish lad had brought Russian embroideries, and the Italian a peasant dress that his mother had laid away. A Danish neighbor had photographs of the dairy farm in Denmark from which he came, and around these the people crowded and asked so many questions that we almost had an agricultural lecture then and there.

On every hand one heard the phrases: "Why, I remember;" "I haven't seen one of these in years;" "My grandfather used to tell me;" and so on. We had to open the exhibit another day, and Mrs. Parsons and the rest of us were as surprised at the success as was Miss Hetty. It meant much more than a few hours' pleasure, for when the treasures were returned to their owners there was no longer danger that they would be destroyed or lost. One day last week I went into Miss Hetty Prior's for some of her duck eggs to set. There was the spinet in the parlor, by the front windows, with flowers instead of milk pans on it.

Mrs. Parsons says there's one thing she's sorry for, and that is that we can't have the exhibition this year as a celebration of the splendid peace centenary.



The Rural School

I AM the fountain of progress, the headwaters of civilization. I am dedicated to mankind and consecrated to its service. I hold within me knowledge; and knowledge is the key to all things. I am the rock upon which all government is founded; I am the corner stone of the nation. My service is great, my rewards small, but I serve all alike.
C. C. S.



Some Real Fathers

A Story of Co-operation Between Parents and Sons

By John Leslie Simpson
Illustrated by De Alton Valentine



MOST fathers take a pardonable pride in their sons, and want and expect them to grow up and be a credit to the family. And many fathers hope that their sons may have an easier and more agreeable journey through life than their elders.

When we speak of saving the boy we mean a number of things, usually. Saving the boy means, from the standpoint of a farmer, the prevention of his development into a certain type more or less common in the cities; it means his development along lines of usefulness, integrity, and industry, together with the addition of some of the things not thought so necessary to the last generation—a certain amount of scientific agricultural knowledge, the ability to meet people of refinement, and the disposition to mix duty and pleasure so that neither shall override the other.

While most farmers are not inclined to talk much about their duty to the rising generation, or to philosophize along sociologic lines, nevertheless they do a lot of thinking along these lines, and the result of their thinking, and the course of action that follows it, is that a large per cent. of the younger generation in Kansas have retained the desirable characteristics of their parents, together with other qualities the age demands.

Give the Boy a Chance to Learn

As an example of Kansas methods of developing the boys along right lines I will relate the story of the son of a farmer-physician. This man is rated wealthy in the community where he lives, and he could well afford to give his son money for the small luxuries as well as the necessities of life.

However, he does better than this: he gives the boy a chance to earn them for himself. This man has a good farm near the little town where he lives. He furnishes the land and the horses to operate it with, and the son furnishes the feed and the labor to operate the farm. The boy has the profits of the farm for his own use so long as he uses the money with good judgment. During the summer he puts in all of his time working the land, instead of loafing about the streets, learning habits of idleness and vice. He saves what money he can, to pay his expenses through his winters at college. Lately he bought a motorcycle to use riding back and forth from the town where he attends school. He also uses it for pleasure-riding during Sundays and evenings in the summer.

He is a bright, quick-witted boy, the kind that might be spoiled with a life of idleness and too much luxury; but living the life of work and study laid out by his father he will no doubt prove to be a worthy son of his gifted father.

Give Him a Chance to Play

"All work and no play makes Jack a dull boy," on the farm or anywhere else. Realizing this, the Kansas farmer sees to it that the boy has a certain amount of recreation and pleasure scattered through his days of toil. A majority of Kansas boys that are over fourteen years of age have a horse and buggy of their own, or a horse and saddle; many have bicycles or motorcycles. Two or three times a week the boy attends some show or function in town, in the evening. Perhaps he goes to a church sociable, a lecture, or a moving-picture show. There are relatively few entertainments of a vicious character in rural communities, hence he may get something beneficial from most of the functions he attends. During the late summer and early autumn he attends the county Chautauqua for a day or two, the county fair, and perhaps the Old Settlers' Reunion. The boy looks forward to these days and evenings of pleasure, and anticipation and memory help prevent his work from being drudgery.

The son of the Kansas farmer is trained along financial lines from childhood up, so when he is ready to start the serious road of manhood and responsibility he doesn't have to plunge in the water, so to speak, without knowing how to swim a stroke.

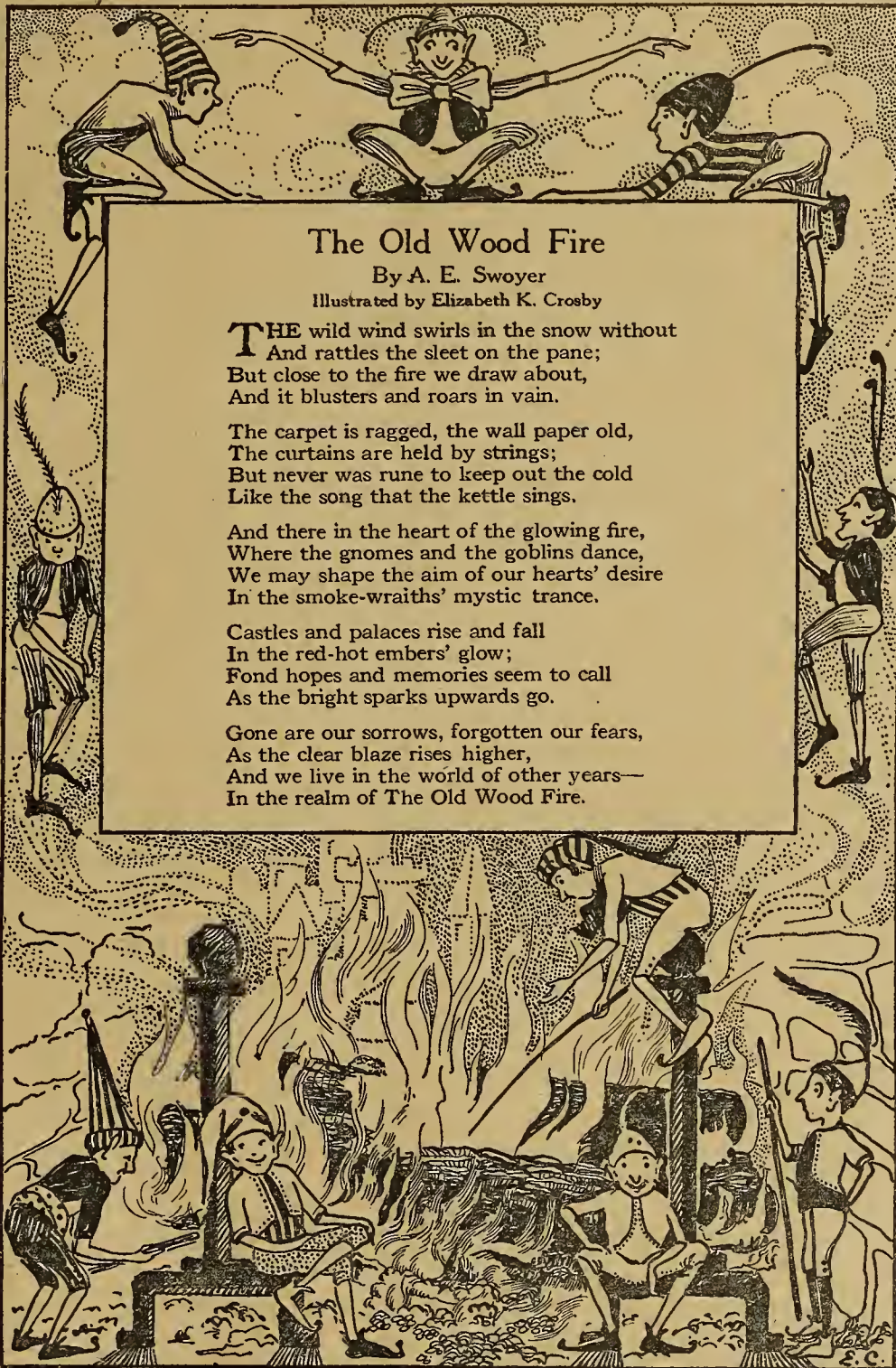
A Kansas farmer who had become fairly well off by his own efforts trained his boy along these lines. When the boy was twelve years old he gave him a pair of colts, the boy to take care of them, and help with the other work to pay for their feed. When the boy was

sixteen the colts had grown into a fine team of work horses. The boy now had some pigs, calves, etc., besides the team, and took a real interest in the farm and the work. By the time he was nineteen years old he had nearly enough equipment to farm for himself. He bought another horse with money he had made working for neighbors, got some tools

let the boys make the rest for themselves.

The schools and colleges of Kansas occasionally issue statements telling exactly what per cent. of the students are wholly or partly self-supporting during the school year, and this percentage usually runs from fifty to seventy-five.

A successful Kansas farmer is planning to give his boys a start in life as



The Old Wood Fire

By A. E. Swoyer

Illustrated by Elizabeth K. Crosby

THE wild wind swirls in the snow without
And rattles the sleet on the pane;
But close to the fire we draw about,
And it blusters and roars in vain.

The carpet is ragged, the wall paper old,
The curtains are held by strings;
But never was rune to keep out the cold
Like the song that the kettle sings.

And there in the heart of the glowing fire,
Where the gnomes and the goblins dance,
We may shape the aim of our hearts' desire
In the smoke-wraiths' mystic trance.

Castles and palaces rise and fall
In the red-hot embers' glow;
Fond hopes and memories seem to call
As the bright sparks upwards go.

Gone are our sorrows, forgotten our fears,
As the clear blaze rises higher,
And we live in the world of other years—
In the realm of The Old Wood Fire.

and sets of harness, and rented twenty-five acres of land from a neighbor. He helped with the work at home, and farmed a little for himself. Later he rented a quarter section of land. At twenty-one he has a full set of farming tools, horses, etc., and has "landed squarely on his feet." Next year he will farm the home place on shares. Here is a good example of how Kansas farmers save their boys.

Kansas farmers have found how to educate their sons without spoiling them. Given a free hand and all the money he cares to spend, the average boy is inclined to deteriorate in certain ways while attending high school, academy, or college. The chances are that under these conditions he will develop traits that would not make for usefulness in life. The sons of most Kansas farmers do some form of work while attending school away from home. Some work for their board, others work at odd jobs when they have vacant hours, and during days when there are no classes. A few pay all their expenses by working while at school, but sometimes this occasions an amount of drudgery that injures the health and spirits of the students. The majority of farmers, however, pay from one third to one half of their sons' expenses at school and

soon as they become of age; and in order to help them financially, without encouraging them to become loose spenders, he hit upon the following plan: When the first son was twenty-one he had two thousand dollars laid by to invest for the boy. He got a local banker to invest a like amount, and together they bought about four thousand dollars' worth of Percheron brood mares at an average cost of about six hundred dollars each. The son was sent to take the short course at the agricultural college in order that he might take care of the animals properly. The banker furnishes a barn and the feed for the mares, and the young man takes all the care of them. Boy and banker divide the profits.

As a rule country boys do not have the opportunity for Boy Scout work, and later for military drill, as do the youths in the cities. However, there is much in their everyday work that makes up for this; and there is another thing that is a factor in the development of desirable qualities in farmers' sons, and that is baseball. In many Kansas communities Saturday afternoon is holiday for the boys, and the time is spent playing a match game of ball with some team from a near-by community. Often the families of the neighborhood gather at the diamond to spend a social



afternoon to cheer their local team on to victory. Baseball keeps the mind and body of the farmer's son clean, alert, and to a certain extent free from the evils of idleness and vice.

The preservation of the boys of a nation is surely as important as the right settlement of the tariff question, or the initiative and referendum. And the farmer who brings his sons up to be masters of their business, agriculture; to be forward-looking, as President Wilson puts it; and to take an active part in all that concerns the practical and social side of farm life, is doing a real service to his State and community. My observation has been that the Kansas farmer is doing all in his power to make his sons useful to themselves and society.

Strange Plant Emigration

By Walter K. Putney

IT IS often hard to account for the way in which plants spread from one country to another, and yet no such emigration has taken place but the botanists have been able to advance some theory to account for it. In the early seventies of the last century the scientists in France were puzzled by finding that many new plants hitherto unknown in that country had mysteriously sprung up. In the summer of 1872 noted botanists went carefully to work to find the cause of this strange emigration, and they succeeded admirably. They found no fewer than two hundred plants natural to Germany and the countries south of her; these plants were mostly of the grass, pea and bean families and were found only in the territory occupied by the Germans in the siege of Paris. This is a good example of the strange way in which plants travel from place to place.

House-Cleaning the Pictures

By Maude E. S. Hymers

MANY a housewife, after the semi-annual house-cleaning, feels a vague dissatisfaction with the pictures on her walls; they seem not to reflect the shining cleanliness of the other furnishings.

It will not suffice to call the pictures clean when they have merely had their faces washed and their backs whisked. This does not take into account the well-known characteristic of grease-laden steam to hunt corners, and the tendency of dust to insinuate itself into the smallest crevices. If you look closely you can see both beneath the surface of your pictures, manifesting themselves in the form of a general haziness. To be really clean, pictures should have a very thorough overhauling, once a year.

First remove the brads which hold the wooden backs in place, and lift the picture off the glass. Wipe the picture itself with a dry, clean cloth, or, if much soiled, with a piece of fresh bread, changing as it becomes blackened. If stains are present a reliable wall-paper cleaner may be used with discretion. The color of the washcloth used on the glass will be sufficient evidence that dirt may find its way between frame and glass.

When putting the picture together again see that there are sufficient brads to hold the glass firmly without any "give" when the face is pressed; and finish by gluing heavy wrapping-paper over the entire back to within a few inches of the edge of frame. This will do much toward excluding dust in future.

Gilt frames should be restored by an application of liquid gold, and white ones re-enamelled, neither of which is difficult to do. Indeed it may be well to go over the entire collection of frames, using the same enamel or stain, one which has been selected because of its complete harmony with the general coloring of the room. This is inexpensive, and will do much toward improving the appearance of your home.

Tarnished and rusted picture-hooks are an eyesore. These also may be restored by an application of enamel, white if the molding is white; any color to match the molding. See that the wires are free from kinks, and stains and rust removed by wiping them with a cloth wet in kerosene, which also will assist in keeping flies away. Hang the wire from a hook at either end of the picture, instead of from a single hook over the center. The appearance is better, since the picture hangs flat on the wall.

A Mother's Confession

The Story of a Lonely Child in an Unheeding Home

By Haryot Holt Dey

MY LITTLE boy stood before me with lines of perplexity plowing deep furrows into his brow as he said: "Mother, please don't always tell me what not to do. Tell me what to do, and I will do it." In that way I discovered that I was not the only one who had a problem. He had one too, and I was his problem. It became evident to me that I was not the right kind of a mother.

On another occasion I had a lesson which I recall bitterly even now, and again my boy was the teacher. It was his little household task to prepare the kindling. It wasn't much to ask a sturdy, active boy to do,—to prepare the kindling,—but sometimes the kindling box was empty, and there was considerable censure from me, for it was very annoying to need kindling and find none ready. One day he was taken very ill, and I hung anxiously over him for weeks. In his delirium he was haunted by the kindling. In the silent night when I was keeping vigil he would start up from his pillow: "Let me go now, Mother, and chop the kindling for you. I'm so sorry I forgot it. Please, don't scold me, Mother. I'll make it for you right away. The kindling—the kindling! I forgot the kindling—forgot—forgot—forgot—I forgot!" He was only six. He forgot at six!

Well, God was good to me, for He let him get well. But there came another lesson. There are closed rooms in my heart, and in every room is the proof that I was not worthy to be a mother. I have had time, years, in which to reflect.

In one of the rooms I see the chairs standing about in orderly fashion, the chairs he loved to disarrange to make his trains of cars, his noisy cars that made me nervous. He left a trail of disorder wherever he went; toys, the mud on his shoes, the scratches on my furniture, all annoyed me. In the closed room the chairs now stand silently about in orderly fashion to rebuke me. There are no toys, no rusty little muddy shoes, no scratches on the furniture; all is as orderly as a showroom in a shop window. It is not a comforting room. He said one day that his lesson was about toys, noise, joys, and boys, and that his teacher had said they all belonged together. I wish I had laughed more with him at the little joke.

The Way of the Transgressor

Once he invited a boy who had come to play with him to stay for dinner, and when they came in, he so full of hospitality and proud that he had the liberty to invite a guest, I sent the guest home. A look I had never seen before came into his face that day. *I sent his guest home!* Well, it was my opportunity, and I lost it. That lost opportunity occupies one room by itself in my heart. Iron went into his soul that day. How simple it would have been for me to invite his guest and make them both happy! I have for many years been convinced that my approving smiles were the fount of

his happiness. This is what I find when I look into that room—regrets for a great opportunity which I lost.

He has been gone for a good many years now. Whenever I see a postman I glance at his packet of letters; there might be one there for me—from him. Whenever I am in a crowd I am watching; or on the street, or anywhere, I scan the faces of all the men I meet, for it has been so many years that it may be I shouldn't know him, and maybe he wouldn't know me. Sometimes he seems so near to me that I go out into the yard around the corner of the house and call his name aloud. But there is no answer, no answer. I dream of him at night; he is falling, and I am reaching out, and we both fall. I waken in alarm, a nightmare upon me. When the doorbell rings I am expectant, and always when I have leisure I sit by the window and watch. At night I leave the curtains up; and if the night is very dark, or if it storms, or if I have been thinking about him a great deal, I place a lamp in the window—for him. It may be that he will come some time. If I could just see him long enough to apologize for the mistakes I made! It might seem strange for a mother to apologize! But he is a man now, and what I have to say to him, were he to come in to-night, would be, first, about the kindling; and then I should tell him how sorry I am that I ever scolded; and how sorry I am that I sent his little friend home that day when dinner was all ready. I remember how he couldn't eat. He said a lump was in his throat and he couldn't swallow. That I should have so hurt his pride! I wonder he didn't hate me. Maybe he did.

Both of those incidents were important, for they were my God-given opportunities to get into his heart. I seemed to have an idea that because he was in my heart, that that was all that was necessary. Really, that was not important, for my love for him was a foregone conclusion, merely a selfish mother-love. I disappointed him as well as myself. I know now that unless you get into a boy's heart early the door of his heart closes, and you are left, waiting, on the

outside. I could have gotten in so easily! Then he grew to be a big boy—a big, middle-aged boy. He was neither child nor man, but just in between. As I was not inside his heart I could not understand him; neither could he understand himself. No middle-aged boy can understand himself. His sole chance for an interpretation is through his mother, and even that is best accomplished through her silence, for the loving thought of a mother is the most outspoken voice there is in the silences of the soul.

We must be very considerate of the middle-aged boy. He is passing from childhood to manhood. He doesn't like to be questioned. He doesn't like to be asked where he is

going when he goes out, nor how long he will be gone. His confidences cease. He becomes reserved and silent. This is the time for the mother to trust her son. The boy in him dies, and the man is born. The man's thoughts are almost as new to him as the child's thoughts were when the mental processes began to form. The new man is overwhelmed by the consciousness of himself. He is an individual.

I have read in biographies of great men what power the sympathetic mother had in their rearing, and in this way the great fault of my lack of sympathy has been revealed to me. Oh, my son, my son!

There is a letter from the mother of Phillips Brooks written to a young mother who wrote to her for advice, and in it she speaks of her sons at this middle-aged time of their youth:

Two Kinds of Mother

"I have always believed that it was during this period that the Creator was speaking to my sons, and that it was good for their souls to be alone with Him, while I, their mother, stood trembling, praying and waiting, knowing that when the man was developed from the boy I should have my sons again, and there would be a deeper sympathy than ever between us."

To go a little deeper into the testimony of a mother of good men, let me say that after her death Bishop Brooks wrote of her: "The happiest part of my happy life has been my mother." And then on the stone at her resting place he had

carved the wondrous words, "O woman, great is thy faith; be it unto thee even as thou wilt!"

I shall now speak of my last closed room.

As I am now white-haired and have learned my lesson, I am persuaded to tell what is in the darkest chamber of my heart. If there were no remedy, no sure specific, I should not now reveal what I am about to tell. What good would it do?

But there is a specific, and I here cry hope to others, to some other mother who may be reading this; to some other mother whose heart aches with the same anxiety that once possessed mine.

The wrong influences of the world early claimed my boy. They wove their meshes about him, and he was unable to extricate himself alone. I was powerless to help him; I didn't know how. All I knew how to do was to disapprove. I attended dutifully to his material wants; kept his clothes in order, made his bed, cooked his food, and waited for him to come home. Oh, the hours I have lain awake listening for the sound of his footsteps, for the uncertain hand to click the key in the lock! I have known times when I gave way to frenzies of despair. The disgrace of it! That the neighbors should see him! That my son should be a drunkard! That I should be thus cursed of God! But it was no use. There was no hope.

The End

One day a stranger came to my door and told me that a young man was lying in the gutter in front of my house.

"What is that to me?" I replied, and closed the door.

Thoreau says: "Why say that a man's heart is as hard as a stone when stones are infinitely soft compared to some men's hearts?"

Finding no help at home, no sympathy, no understanding, no protection, no love, he went away. This is all there is to tell. He went, and he has not returned. That was a quarter of a century ago. Twenty-five years is a long time to spend in reflection, in study upon one lesson.

And so I am waiting.

My gate posts are marked, and every morning a man raps at my kitchen door. I am expecting him, and so I have a breakfast ready and waiting. They are curious-looking fellows, these derelicts that apply for the plate of steaming food I hand out to them; and sometimes I talk with them, for they are God's children, as I am His child.

Had I understood the spirit of sympathy, had I understood childhood and unfolding youth, my boy need not have gone away. This, then, is the message of my story!

Many a mother mistakes her selfishness for love. No real love exists which does not feel the joy of self-sacrifice. This is the test. I failed in love.

Now I will light the lamp and put it in the window.

Beriah Sallerby's Housekeeper—[Continued from Page 20]

"Well," answered the housekeeper in a tone of gentle deliberation. "It ain't really any of my business, but if you're liking to tell me I'm ready to listen."

"I s'pose," began Sallerby meditatively, "that if I'd gone last night, 'stead of sleeping on't, I'd 'a' tore round more or less and said things I'd 'a' wished I hadn't, and—well, I s'pose I *would* have gone if it hadn't been for you, Miss Manners."

"Just as well to sleep on a thing like that—things gen'rally look different in the morning," observed the housekeeper blandly.

"Still, being's I'd started in to do it, I thought I'd go round and see what 'ud come of it," went on Sallerby doggedly.

"Uh-hu?" breathed the housekeeper.

"Well, I'm bound to say that Anson Trafford was pretty decent when I told him why I'd come. Said it *did* look a mite too sarcastic, come to see it in print, and if he'd riled me he was sorry."

"No man cau say fairer'n that," I says, holding out my hand to him, which he takes; but when I starts to leave he kinder keeps holt and goes to patting me on the back with his other hand. 'See here, Beriah,' he says, pleasant-like but looking me in the eye, 'we've known each other, boy and man, for forty-odd years. I've said I'm sorry if I put you out, and I am; but come right down to business, Beriah, ain't what I said facts?'"

The housekeeper's eyes focused themselves upon the bottom of her teacup.

"I stood up and looked at him," her employer went on, "and I guess I opened my mouth, but no words came. Anson, he just shoved me, gentle-like, inter the biggest, easiest chair in the office, an' sat down side er me. 'Beriah,' he says, 'you've been living by yourself all these years, and I dare say you've kind of dropped things one after another without just sensing it. You've got in the way of buying a pound of crackers and quarter of a pound of cheese, and picking up what news you could get hanging around Rawter's store. I'm not saying that you started in to be close-fisted, Beriah; but living hand to mouth, 'way you have, is enough to make any man skimp. Maybe, though, that your taking on a housekeeper's the beginning of better things.'"

"I don't rightly know's I'm taken on yet," observed Miss Manners, "but go right ahead, sir, if you please; it's very interesting."

"You've been shingling, too, I noticed," Anson says, and stops. "Yes," I says. "Something the housekeeper was saying put me in mind on't."

"Well, I couldn't but see what was needed," interposed Miss Manners with a little cough.

"Then Anson, he leans back in his chair, like he was considering. 'Housekeeper you've got is a stranger to this town,' he says, 'but her folks wa'n't strangers to me. I worked for 'em when I was a husky young chap, 'fore I took to

editing, and her pa and ma were the salt of the earth, and from all I've heard the daughter ain't a bit behind 'em.'"

"Now, you needn't—" struck in Miss Manners, but Sallerby interrupted her.

"I'm just telling you what he said, that's all. Then we passed a word or two 'bout the weather and the crops, an' shook hands, and I came off; but I've kinder been thinking it over ever seuce. Day's Saturday, ain't it? An' you come a-Mouday. Well, week's most up."

"To-morrow's Sunday," ventured the housekeeper, "and being as the week is 'most up I'd be glad to know how you feel about my staying on as housekeeper, if you don't mind, sir. Seems if I'd enjoy Sunday better, knowing 'twas settled one way or t'other."

"Hum-m-m!" Sallerby turned his head slowly around, viewing the neat, comfortable, well-cared-for room. "I may's well tell you, Miss Manners, that, thinking it all over, I've decided I don't want a housekeeper. Not," he went on hastily, "but what if I *did*, you'd be the one I'd want, Miss Manners! But—no, I don't want no housekeeper."

"Then I'd better be getting my things together, sir," replied Miss Manners a little dully. "I was kind of hoping—howsomever, it's for you to say."

"No," rejoined Sallerby slowly. "I ain't wanting a housekeeper." He paused, looking keenly into Miss Manners' face. "What I want, Miss Manners, is a wife."

"Oh!" Miss Manners paused, consid-

ering. "S'pose you've one all picked out," she went on rapidly. "Well, the house is all cleaned up for her, anyway!" she euded with an effort at cheerfulness.

"Far's I'm concerned she's picked out; yes," responded Sallerby doggedly; "and what's more, she's a-setting right in this room an' hearing me say so."

Miss Manners sent a sudden glance around the room; then her cheeks flamed and she sank back into her chair.

"Me?" she gasped.

Sallerby nodded solemnly.

"Beriah Sallerby! You never laid eyes on me till inside a week, and—"

"That's so, Tryphosy!" Sallerby leaned forward. "What I've seen of you is enough though, let alone what Anson Trafford said to me. You're the salt of the earth, Tryphosy, sure enough! And you know plenty 'bout me by this time anyway. You know I'm the orneriest, meanest, shiftlesst, no-accountest specimen in the whole township of Becksfield. That ought to do ye, Tryphosy. But—there's been some change in this last week, and mebbe if you'd take hold for keeps there might be a bigger change yet. Come, Tryphosy, won't ye resk it?"

Miss Manners turned slowly towards Sallerby, her eyes glistening. "Well, Beriah, seeing how 'tis, I'll—yes, I'll risk it. There, there, Beriah! We're too well along for all that! Sakes alive, if it ain't going on half past seven, and those supper dishes not washed yet! Guess I'd better set some bread, too!"



"You mean, hateful thing, you!"

The Noses That Know

By Rose Seelye-Miller

"JUST don't care, so there!" stormed Bessie. "Johnnie sticks his nose into other people's business." And Bessie crumpled down on the porch step and plumped her warm little head into Aunt Jane's lap.

"Why-e-e!" ejaculated Aunt Jane slowly. "I never before heard you complain of Johnnie, what has he done?"

"He's been doing everything, just as mean—" and Bessie sat upright in her righteous wrath at the remembrance.

Aunt Jane smoothed back the tangled hair from Bessie's moist forehead, then she went briskly into the house, her crisp blue percale dress crinkling and rustling at every step in the most entrancing way. Bessie nearly always knew that the rustle of Aunt Jane's skirts meant something good being done for somebody, and as she herself was the injured person just then she felt pretty certain— Oh, yes, she felt certain! Bessie's brow cleared and she went to the water tank near-by and plunged her hands into the sparkling depths and washed her face with many a swift dash and splash, as she had seen the hired men do many times. So interested was she that she did not see Aunt Jane return to the porch with a small tray; nor did she notice the approach of two boys in secret conversation; nor did they see the stalwart figure of Uncle John as he too neared the scene of action. Bessie's face had dipped into the water most ravishingly and she was reveling in its cool touch when suddenly, propelled by a force behind her, her head went down into the depths and she emerged a moment later with her hair dripping and her face flaming.

"You mean, hateful thing, you! Can't anyone do anything without you come and stick your nose in?" And Bessie strode to the porch where a clean crash towel swung from its roller, and where Aunt Jane waited with the tray.

"Here's a nice drink for you and some cookies," Aunt Jane said quietly as she exchanged a look with Uncle John, who had come up with an arm flung over the shoulder of young John and the neighbor boy who was with him.

"That looks like raspberry shrub," Uncle John said critically as he stopped for a moment near the little tray. "I wonder if there is more where that came from! I wonder if there could be any chance be two more glasses of it."

"Not by any chance," returned Aunt Jane, and her words caused the two boys to exchange hurried and guilty glances. "But," she continued placidly, "there is more by premeditated provision."

The boys did not quite understand those two long words, but they did understand the word "more," and seated themselves accordingly to await the arrival of the treat. They felt sure that neither Uncle John nor Aunt Jane had seen the encounter at the water tank, and they felt certain that Bessie had been too much of a trump to tell of all their annoying attentions during that long hot afternoon. So as there's no sin

very troublesome except the sin that gets found out, the boys giggled and whispered together, and finally inquired kindly how Bessie's hair became so wet.

"Here boys, have some," Uncle John interfered, "and while you're eating and drinking I'll tell you something about a queer creature who has five noses and yet does not stick them into other people's business; he has all he can do to attend to his own."

"Five noses! It must be the hydra-headed dragon," declared Bessie, sipping her cooling drink as Aunt Jane deftly undid her heavy braids and wiped the water from her hair.

"Has he five mouths too?" asked young John interestedly.

"No, but each one of his noses has an especial purpose and does not interfere with the duties of any other one of his nasal appendages."

"Wait a minute, Uncle John. Wait till I can call Elmer and little Helen, they'll want to hear, too, about the noses that know their own business." And Bessie skipped away, her injuries forgotten.

"Now, Butterfly, are you ready?" asked Uncle John gaily as he lifted the curling strands of Bessie's yellow hair and she nestled down close to him.

"Yes, we're ready. Now, Elmer and Helen, you listen, for this is something beautiful."

"As I was walking in the woods to-day I ran across a five-nosed little creature. He lives in the ground, and he has one nose by means of which he tells whether he is in his own home or in that of an enemy, for their homes are all very much alike and very, very wonderful, but that is not the story for to-day. A second nose tells him whether a creature of his kind belongs to his own family or to that of a colony living near, for, like the Chinese, children and grandchildren and great-grandchildren—"

"And great-great-grandchildren?" inquired young John.

"And great-great-great—" said Elmer.

"And great - great - great - greatest - great—" concluded Bessie.

"Yes, and more than that, too. There are hundreds all living quietly and peaceably together; relations, too. They don't save all their good manners for visitors, which is a pretty good scheme. Some folks," said Uncle John whimsically, "are very economical with their good manners."

Young John and the neighbor boy exchanged glances but said nothing.

"A third nose," continued Uncle John serenely, "is something like that of the bloodhound, only that the third nose of the ant— There now I've let it out, and you know what the five-nosed creature is!"

"The ant!" cried Bessie.

"Why the ant?" said young John, quite forgetting himself and his misdemeanors. "Can he follow a track like a bloodhound?"

"Not just the same, for he doesn't track an enemy, but he can track himself. If he travels far away he can travel back

without ever paying attention to landmarks or blazing a trail. He follows back on his own track by the use of his especially provided nose."

"I wish, then, that I had an extra nose or two," young John declared enviously.

"Oh, I don't know; one answers very well if applied only to right uses," Uncle John said simply, with a knowing look at young John, who blushed vivid red.

"What's the fourth nose for?" asked little Helen.

"The fourth nose is something like the heart of a mother, because it seeks out the babies of the colony and does not get them confused with those belonging to its neighbors. And the fifth nose detects the presence of an enemy." Here Uncle John paused abruptly. Then he went on: "A nose to detect the presence of an enemy would be a very useful thing sometimes."

"If Bessie had had such a nose a little while ago—" began Aunt Jane softly.

"But I haven't any enemies," declared Bessie stoutly. "What Johnnie did was just for fun. Cooled my head off, too."

"And made your hair like grape tendrils, all goldy," added Elmer, who had an eye for beauty.

"And your cheeks as soft as roses," said little Helen, stroking Bessie's face.

"And her spirit like that of a patient little angel," declared Uncle John. "Who says a game of Blind Man's Buff?" he asked genially.

"I'll be It," cried young John, his heart soft with penitence.

"No, let me be It," said the neighbor boy, "and let Bessie tie the knot hard and tight, and pretty nigh choke my nose, so't won't get into other people's business any more."

"Sho!" said young John, "I guess I was to blame the most, and I'm terrible glad I haven't only one nose to look after. I'm not wise enough to have more'n one, and I can't half 'tend to that, and keep it the right way."

"Oh, that's all right, Johnnie," said Bessie, "and I'll be It myself, just to show I'm over being mad."

"I guess," Aunt Jane said to herself, as she removed the tray and glasses, "that the ant with his wonderful antennae has a sixth nose, which he has used to adjust the differences of some children not wise enough to be entrusted with more than one."

And when young John finally gave Aunt Jane his good-night kiss he whispered to her, "I have but one nose, but it's going to be the nose that knows enough not to stick itself into other folks' business."

"That's right, Johnnie," she whispered back. "It's the loveliest kind of a lesson to learn, and learn early, not to interfere with the enjoyment of others, even if they are weaker and enjoy things that you think you couldn't or wouldn't enjoy."

"Isn't Uncle John a corker, Aunt Jane? Isn't he? He never scolds, but he always knows."

"Uncle John has a nose that knows," laughed Aunt Jane softly.



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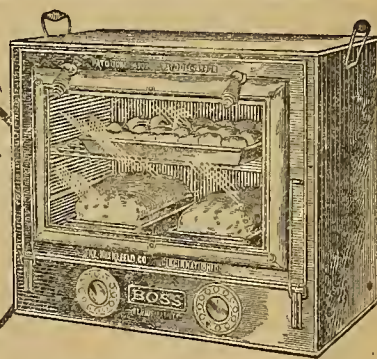
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Dainty Dishes for the Invalid

By Jessie V. K. Burchard

THE food for invalids should be a separate thing from the family cookery, and should of course be prepared under the physician's direction, when one is in attendance. Sometimes, however, there are cases when neither doctor nor nurse is present, and when conditions call for special diet. Then the housekeeper must use her own judgment, and it is well to remember that too little is safer than too much, even though the convalescent grumbles and scolds. Often digestion is very weak on recovering from an illness, and a little nourishment given often is better than three too hearty meals a day. Among the light foods the gruels hold a prominent place, and are much liked.

OATMEAL GRUEL—To one and one-half cupfuls of boiling water add one-fourth cupful of rolled oats, a tablespoonful of flour, and one-fourth teaspoonful of salt; let boil in the upper part of a double boiler set directly over the fire, for two minutes, then set in the lower part of the double boiler, in which water is boiling, and cook for two hours. Strain, bring to the boiling point, add milk or cream as permitted, with perhaps a little sugar.

INDIAN MEAL GRUEL—Mix one tablespoonful of Indian meal, one-half tablespoonful of flour, a little salt, and two tablespoonfuls of cold water to a smooth paste. Stir this into one and one-half cupfuls of boiling water, and let cook slowly for one hour and a half. Strain, and add milk or cream.

CRACKER GRUEL—One tablespoonful of rolled and sifted cracker, scalded with three-fourths cupful of boiling milk, and cooked over hot water for five minutes, then add a pinch of salt. Another cracker gruel, making a larger quantity, is compounded thus: Mix four tablespoonfuls of rolled and sifted crackers with half a teaspoonful of salt. Bring one cupful of water mixed with the same quantity of milk to a boil, stir in the cracker dust, which has been mixed to a paste with a little cold water, and boil for a few minutes. Strain, and add more milk, and salt, if needed. Sometimes thickened milk is very good in case of bowel trouble. To make it, scald a cupful of milk, reserving two tablespoonfuls, with which make a paste with one tablespoonful of flour. Pour into the hot milk, stir until it thickens, and cook, covered, over boiling water for half an hour. Salt to taste. Sometimes an inch of stick cinnamon cooked with the milk helps to relieve diarrhoea.

FLOUR GRUEL—Make a smooth paste of two teaspoonfuls of flour, a saltspoonful of salt, and a little cold water. Stir into one cupful of boiling water, and cook till it is smooth and thick, then strain, and add sugar and milk.

There are many refreshing drinks that may be used in the sick-room, some merely to quench thirst, while others are nourishing as well. If coffee should be



An appetizing tray

desired, and it is not thought best to give it, a crust coffee is not a bad substitute. Toast stale bread cut into thin slices until it is almost burned, then put the slices into a bowl, and cover them with boiling water. After it stands a few minutes strain the liquid.

ORANGE AND LEMON—Strain the juice of one orange and one lemon over a glassful of crushed ice, adding sugar.

COCOA MILK SHAKE—Put a cupful of milk, a teaspoonful of cocoa, a tablespoonful of sugar, and a few grains of salt into a shaker and shake until it is blended; strain over crushed ice.

ORANGEADE—Cut the yellow rind of an orange very carefully from the white, and pour over it a cupful of boiling water, adding sugar to taste. When cold add the juice of the orange, and either a teaspoonful of lemon juice or a tablespoonful of grapefruit juice, currant juice, or grapefruit juice. Strain, and serve with crushed ice.

EGGNOG DE LUXE—Beat the white and yolk of a perfectly fresh egg until the yolk is light and creamy and the white is very stiff. To the yolk add a teaspoonful of sugar, and beat again. Then beat in the flavoring. Add half a cupful of whipped cream, and fold in the white of the egg. This with a few wafers will make a good luncheon.

Broths are always reliable standbys, and there are so many different kinds

that even should broth be ordered for every day in the week the cook should be able to serve something different each time. One of the simplest is:

CLAM BROTH—Heat clams in their own juice, strain through cheesecloth, and serve hot, seasoning as liked. Oyster broth is made in the same way. For variety a little hot cream may be added.

MUTTON BROTH—Remove the fat and skin from two pounds of the neck of mutton. Cut the meat into small pieces, breaking the bones, place in a saucepan or a Scotch bowl, pour over a quart of water, and let stand for an hour. Then heat nearly to the boiling point, and let remain there for two hours, then strain through a coarse sieve.

CHICKEN BROTH—Joint an old fowl, cover with cold water, bring slowly to a boil, and let simmer very gently for five or six hours. Let the broth get cold and remove every particle of fat, then reheat, and salt to taste, adding some carefully boiled rice, if it is liked.

Eggs are another staple of invalid diet, and I shall mention two ways of preparing them that are not quite so common as the usual poached, coddled, or omelet.

SCRAMBLED EGGS FOR THE SICK—Beat an egg slightly, add a teaspoonful of butter, a little salt and pepper, and one-fourth cupful of hot milk. Pour into a double boiler, and stir over hot water until it is thick and creamy, and serve on a slice of hot toast.

EGGS IN NESTS—Beat the whites of eggs as stiff as possible, seasoning them



Eggs in Nests

with salt and pepper while beating. Butter ramekins, heap the egg white in them, and in the middle of each drop a yolk carefully, sprinkling a few grains of salt on it. Set the ramekins in a moderate oven, and let them bake until they are very puffy and a golden-brown.

For something a little different there are soups galore. If cream soups are allowed try this:

POTATO SOUP—Half a cupful of mashed potato mixed with one cupful of hot milk and heated in a double boiler with four drops of onion juice or a little onion salt and one-fourth teaspoonful of minced parsley. Thicken with half a teaspoonful of flour wet with one teaspoonful of cold milk. Season with salt and paprika, beat well, and strain.

CREAM OF OYSTER SOUP—Heat one pint of oysters in their juice till the edges curl. Drain off the juice, put the oysters through the meat grinder; warm one teaspoonful of butter, blend it with one teaspoonful of flour, and add the oyster juice, then the oysters and half a pint of cream. Press through a sieve, add salt and pepper to taste, heat again in a double boiler, add one-fourth cupful more cream, and beat it hard with an egg beater. Serve with little squares of toasted bread sprinkled on the soup.

A Handy Wood-Box

By Mabel H. Wharton

A UNIQUE combination indoor and outdoor wood-box is shown in the accompanying picture. It is especially useful for holding heavy grate wood which is so clumsy to handle and carry into the house. The wood-box is filled from the outside by lifting the hinged shingled cover which is slanted like a shed roof. Two wheelbarrow loads of



wood may be placed in it at one time, thus saving many steps. The wood is taken out from the inside through two little hinged panel doors which are finished to match the woodwork of the room.

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The few houses which, clustering together, form our village

The Child at Home

A Department Conducted by Helen Johnson Keyes

All Inquiries Will Receive Interested Attention

Was It a Fig on a Thistle?

IT IS not a bit hard to work, but, oh, how hard it is to wait, to sit by the roadside and watch for the adventure due to appear *sometime* around that concealing corner and dip in the highway! My eagerness for a wonderful change to manifest itself in Rosaltha obscured my knowledge and my reason. Such changes do not come at once, even in a new environment and after two radical operations.

To be perfectly blunt, Rosaltha was a miserably naughty little girl at our Valentine party. I will begin before the beginning of the story.

My children went off to school that morning, of course, but I had resolved to keep Rosaltha out of school for the weeks she was in my charge. There were several reasons for this: she needed entire days in the fresh air; she needed the care and interest of one person's almost entire time; and she needed to attain self-respect, which could not be attained in an atmosphere of criticism and irritation.

"Let's walk up to your house, Rosaltha," I said. "Your mother and the rest will like to see how well you breathe."

Rosaltha showed no eagerness. Not once since she came to me had she referred to her home, nor had her mother answered my notes regarding her.

The Leaven in the Lump

"We want to invite them to our party to-night," I urged.

"All them babies too?" she inquired, as if the babies were entirely outside of her circle.

"Yes, your brothers and sisters too," I answered with emphasis. "Now put on your coat and cap and come along."

"Say," she suggested, "you ain't just going to drop me there?" Her eyes gleamed with a confusion of terror and anger.

I was on the point of answering sharply, when the pity of it saved me. I went over and kissed her. I don't think I had ever kissed her before. At any rate, the effect was startling. She clung to me desperately.

"When it is time for you to go home," I said, "I shall be perfectly honest with you. Why not? Every little girl deserves to be treated fairly."

"I won't never go home!" she cried.

That cry set me thinking. Had I done this child more injury than good? Had I taught her to dislike her own family? The question was so distressing that I hardly spoke as we walked along the roads, deep in the mud of a February thaw. The problem opened up a field of appalling doubts. Wasn't this too dangerous a matter, this taking a child away from her mother?

We reached the few houses which, clustering together, form our village, the store with its signboard and an empty barrel decorating one end of an empty porch; houses, some of which, alas, are hardly homes, but are only abiding places for people too discouraged to love; a little church with averted face, looking not at the street, but into back yards, altogether a disconsolate and ineffectual church. And suddenly a great rebellion possessed me. This state of affairs was unnecessary! It was the result of untrained human energies, energies allowed to become either inert or vicious because they were not applied to useful pursuits. And all these non-productive people were once children!

R.W.

Scarcely one of them would have failed to respond to wise stimulation and guidance at the beginning of life. In that moment I seemed to see the world made new in one generation, if only everyone would take hold of the children!

But, of course, everyone wouldn't! Well, then, a few of us must work even harder to bring up a generation of children into a generation of grown people just as fine as their original possibilities; that is, we must help every child to develop as far and as well as he is capable of doing. Obviously each child has his limits beyond which he cannot go, no matter how fine are his opportunities. Only a very few can be geniuses or saints, but almost all may be trained to a useful maturity.

Should Children be Dissatisfied?

All at once it seemed to me that in our little village I might accomplish such a work. My time was freer than that of most of my neighbors; for my husband had been a good business man as well as a good farmer, and had left more than we needed when he was taken away from us just before Thomas's birth. I had sold the farm with which he had been so successful, and now that even Thomas was past babyhood I began to feel that I was not doing quite my share of work in this eager world.

Then the question troubled me again. How safe was it to place children in conditions which would dissatisfy them with their overworked homes?

But without dissatisfaction nothing is accomplished. If I could only develop the dissatisfaction through love, instead of through selfishness, it would be all right. If I could make them regret the too hard work and the loneliness because they wanted everything good for their families, I should do no harm, only good.

Splash, I went, ankle deep into a mud puddle. Awakened to consciousness of external things again, I saw the new pastor of one of our four churches struggling to make headway on his bicycle through the slough. He dismounted, and we laughed at each other's dilemmas.

"Oh," I said, "I don't mind the *actual* mud puddles. I mind the bog we get into when our hearts begin to thaw!"

Then I told him what I wanted to do, and yet how I was not convinced of the wisdom of it.

Montessori on the Farm

"Put it up to the mothers," he said, "that's the only way. But you'll have to work it out. *How* are you going to do it?"

"Well," said I, "it is so audacious, I'm almost afraid to tell. But I want to start a Children's House—"

"Oh, it's Montessori," he said, laughing.

"Yes, it's Montessori," I admitted. "Montessori on the farm. Oh, of course I have never studied the system except for reading all the books about it, and of course we could not have many of the 'materials' with which she teaches. They are too expensive. But just a house where little children under the school age, from two and a half to seven years old, could stay all day, and where the older ones could come at odd times."

"I'll tell you what I'll do," said Mr. Comstock, "I'll call a meeting of parents for next Monday evening in the church. I'll do more than that: I'll guarantee transportation to those who live far away. And you can talk to them informally about your idea—and about

Montessori, if you like—and then we'll see if there's a response."

"God's in His heaven,
All's right with the world!"

I said, gratefully.

Rosaltha and I walked on, while Mr. Comstock resumed his efforts in the opposite direction, with the bicycle.

"Doesn't it seem nice to see your own chimneys?" I asked Rosaltha, pointing to where a turn in the road revealed the top of her house.

When questions did not interest Rosaltha she merely ignored them. This one she ignored.

"Why, I'm so excited," I pursued, "at the idea of showing you to your mother! How proud she'll be to see you breathe with your mouth closed and hear you pronounce your m's right instead of all like b's, as you used to do. I suppose all the children will be crazy to hear about Chicago," I went on, "and about that funny little berth you slept in on the train."

A Flash

My monologue was beginning to irritate me, but Rosaltha was as dumb as a fish.

"It is polite," I instructed, "to say something when people talk to you."

"Times wuz when that weren't so," stated Rosaltha, "and I was brought up old-fashioned. S'pose Ma'd stand what you do from kids?"

I was taken aback. Rosaltha's way of appearing for long intervals about as intelligent as a piece of clay and then suddenly flashing out like an electric storm, only to lapse again into coma, was a thing I had not got used to at all.

"There's Ma," she said calmly.

"Well, Margaret," I called, pushing Rosaltha forward, "I've something to show you!"

They kissed each other dutifully, and Margaret told Rosaltha she hoped she was good and had the decency to be grateful for all that was being done for her, speaking with that assumption that of course Rosaltha *wasn't* good, and wouldn't *want* to be good, but must be driven to it by adult compulsion, which is an assumption made by many people who are blind to the hearts of children.

Now, as everyone who understands children knows, it is natural to them all to be good, and only unnatural conditions make them naughty. As for gratitude, that is a trait for grown-up people to develop toward one another, but it should not concern little children much, it seems to me. Children are called into being by no desire of theirs; they are helpless and ignorant through no fault of theirs; what gratitude, in the name of justice, do they owe to this world? All and more than any parents can do for their children they owe their children. Besides their solemn obligation for the very existence of the little ones which all parents should feel, mothers and fathers are debtors for more joy than they can ever repay. How can we hope to give our children even a fraction of the happiness which they give us every day? No, gratitude is for us who are parents, and if we feel it we shall never lack the love of our babies.

Margaret refused flatly to come to the party. She hadn't the right dress, she insisted, and the children would misbehave, and her husband would be angry if she didn't have a hot supper for him. Oh, no, of course he wouldn't go with them; he'd never been known to go any-

where with his family. So, as I find nothing more annoying myself than to be urged to do what I don't think expedient, I did not press Margaret, but I was greatly disappointed.

On our way home we made four calls, and won twenty guests, fourteen of them children. During the afternoon I was busy in the kitchen, and all my youngsters helped me in some way, so that by five o'clock the table was set with salads, sandwiches, pies, and cakes, and the children were flying around with their mosquito-net dresses, valentine verses fastened across their breasts. Every guest who came in had a motto on a red heart hung from his neck, and we played all sorts of games till half past six.

I had been conscious for some little time of Rosaltha's absence, but I was too busy to investigate it, till suddenly I heard a scream from the back regions of the house. It wasn't Rosaltha's voice, but I at once associated the mishap, whatever it might be, with her. Hurrying toward the kitchen I saw a sight I shall never forget.

From Anger to Sympathy

Little Pearl Gerry, whose jet-black curls were the admiration of the entire village, was weeping copiously on a barrel. Around her lay a mass of raven ringlets, and behind her stood Rosaltha, still snipping, snipping, snipping with the kitchen shears.

I am ashamed to say my philosophy vanished altogether, and my overwhelming desire was to administer an unforgettable spanking. My angry hands were already on the miscreant when Pearl's mother came flying in. She was too fast for me. Rosaltha fell from my hands into Mrs. Gerry's, and when I saw the child suffering under them my sympathy suddenly leaped to her.

"Let her alone," I cried. "The curls will grow again, and Rosaltha's been spanked so terribly, always."

Mrs. Gerry gave me one look, and spanked harder. I can't say Rosaltha seemed to mind it much. Despite her ignominious position there was a look of triumph on her face. It is a shocking thing to say, but that expression gave me my first real confidence in Rosaltha's future. She had standards at least, for she had been driven to desperation by a vain, priggish child; and she could bear pain with indifference! I saw that she had temperament and fortitude, and I believed I could train those traits to be useful dynamos.

But it was the end of the fun. Mrs. Gerry and Pearl both had hysterics, and most of the other children cried, and every one told me they hoped I should see now what a fool I was. The food seemed to choke in all our throats. The only person who wanted any was Rosaltha, whose yells could be heard occasionally from the room where she had been sent to bed fasting.

What I minded most was the fear that it would influence all the parents against me at Mr. Comstock's meeting next Monday evening. But that is the next chapter.

Something New in Bulletins

By R. Benson

AMZI is a farmer who believes that farming is the best of all trades. He dreams dreams, now that he has the leisure, and one of his fondest dreams is of a nation of farmers—that is to say, a nation where everybody tills the soil, if not for a living, then for fun.

"I don't guess a country like that would suffer much with hard times," says Amzi.

Another of his dreams has to do with the bulletins which the experiment stations are all the time sending out. He gets a great many of these in his mail, and the most of them he reads with profit. And still he has a quarrel with them, in a manner of speaking.

"They don't somehow touch the spot," he declares. "What gives farming its worst black eye is so many farmers being discontented with their lot, especially young farmers. What they need is to be shown that they've got a good thing—a mighty sight better thing than most men. Why can't we have some bulletins along that line? I don't mean so much bulletins full of figures as bulletins with pictures in them. And by pictures I don't mean so much drawings and photographs as writing that is alive with sympathy and feeling, all about the conditions in cities, what people have to put up with there, how they have to pinch and scrape and do without so much that a man was never made to do without. It seems to me one of your clever pen-pushers might go down into almost any city and by reporting only what he sees there get up a bulletin that would make the average farmer think he was just about in heaven after all."

Amzi denies that such a bulletin would be stepping outside the realm of scientific research.

"What better can science be about than seeking out good cheer?" he asks.

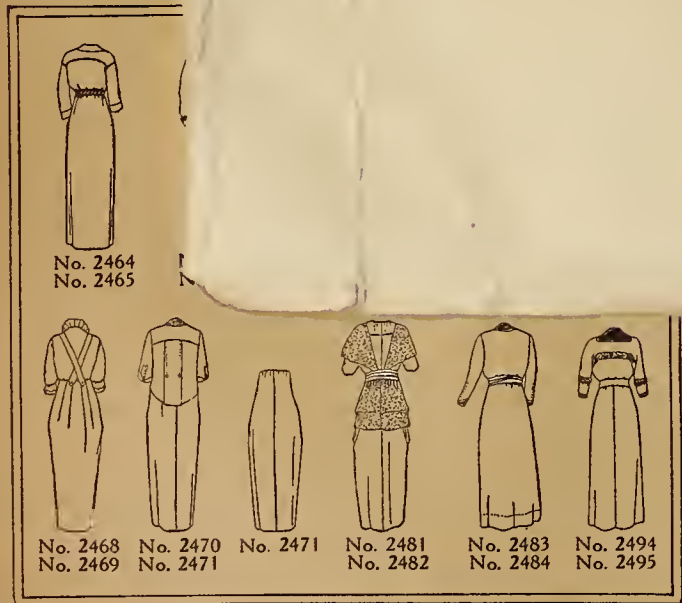
The Outline of the Spring Costume is: No Armscyes, Large

The smart, conservative costumes illustrated on this and the opposite page show all of the best of the new spring dress features. They were designed especially for our readers by Grace Margaret Gould, the Fashion Editor.



No. 2464—
Blouse
32 to 42 bust.
bust, two yards
with five eighths
material, and on
chemisette. Thi
of flowered blue s
not black, used
note. Price of tl

No. 2465—Ga
Side
22 to 32 waist.
waist, three and
forty-inch materi
bottom in 24-inch
eighths yards. TI
larly graceful one.
hips gives it the
draped effect. Pric



out from the neck at the back and sides and is cut low in front. We also have the calla lily and the Medici collars, standing high at the back with wide pointed side portions.

There are kimono, raglan, and mandarin sleeves which give that loose, baggy effect in the blouse, and wide girdles that often form a large part of the waist.

In skirts, which, by the way, keep very narrow at the bottom, there are many draped effects, the drapery this spring keeping well to the top of the skirt, and not down toward the bottom as it has done in the past.

Back to the bustle, says Fashion, and you gasp when

one to one and a half inches high. There is much discussion in regard to skirt lengths. Though Paris is showing many skirts as short as six inches from the ground, in America it will not be so extreme. The skirt two inches from the ground will be a favorite length.

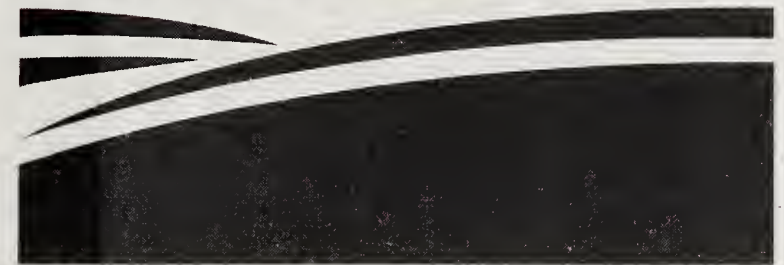
Coats—that is, suit coats—are to be shorter and cut up in front. They will reach to the curve of the hip line. Bolero and Eton effects will be seen, and there will be many models that will have the front hung straight from the bust line to the edge of the jacket.

Waists, Bouffant Hip Effects, and a Narrowing Line at Feet

The fashion page of the March 14th issue will be devoted to clothes for maternity wear and the new baby. In the March 28th issue there will be a big display of the new waists for spring and summer wear



USDA



Fold-out Placeholder

This fold-out is being digitized, and will be inserted at a future date.

2494—Kimono Waist: Front Panel

to 42 bust. Material for 36-inch waist, one and one-fourth yards of forty-five-inch material, one fourth of a yard net, three eighths of a yard of contrasting material, and three yards of trim. This model would be very pretty made of tan linen with heavy tan trim for the trimming. Pattern, ten cents

2495—Gathered Skirt with Panel

to 32 waist. Material for 24-inch waist, two and five-eighths yards of forty-five-inch material. Width of skirt bottom in 24-inch waist, one and one-half yards. For a simple skirt that can be easily laundered no pattern could be more satisfactory than this. The price of this pattern is ten cents

coupon

rest of the three following patterns and Fireside, 381 Fourth Avenue and Fireside, Springfield, Ohio and Fireside, 1554 California St.,

for which please send me the patterns:

No.....	Size.....	No.....	Size.....
No.....	Size.....	No.....	Size.....
Name			
Address			
.....			

head first. And now, because of the high coiffure, the hat with a very high crown is necessary. It is still the vogue for hats to set well down on the head, and as the hair has to go somewhere it goes up into the crown. Height is everything in millinery this spring, and besides the high crowns there are brims which turn way up on one side and trimming that stands up at the direct front, side, or back, but always up and very high. Tulle, ribbon, and feather fancies are favorite trimmings,

something about the new materials. In design there are two patterns which hold especially prominent positions. One is the check or plaid design, the other is the printed design. Crêpe de Chine, satin nocturne and Egyptian crêpe, silk radium and foulard are favored materials for afternoon and evening costumes, while for street wear there is silk and wool crêpe, woolens in frotté effect, and many corded materials; satin-striped poplin, and worsteds both checked and plaided.

A Question and What Became of It

By Helen Johnson Keyes, Fireside Editor

IMAGINE a husband and wife seated in the living-room of their flat in New York. The tumult of unceasing traffic in the street seven stories below knocked at the windows and entered the unheeding room. Frequently the house trembled its response to a passing train upon the elevated road. From the public hall outside of the entrance door floated in occasionally a detached sentence from

building became possible. Here the last of October, 1913, were assembled three congresses of experts to answer the cry for cheap food—the Dry Farming Congress; the Association of Farm Women, and the Farm Women's Press Association. Generalized, the answer made was this:

"Make the most and then a little more of the resources you can command. Let

slough off and in the end perish miserably.

The work of enforcing these facts ethically as well as practically has been taken up with special eagerness by the members of the Association of Farm Women and the Farm Women's Press Association. The Association of Farm Women is made up of women who are active managers of their own farms or of government experiment stations. The Farm Women's Press Association is composed of household editors on farm papers and regular contributors to them. These women are consecrated to the cause of the best rural life possible; in other words, to answering that passionate question which echoes from seaboard to seaboard: "What shall we do? How shall we feed our families?"

The Speakers

Miss Caroline Hunt of the United States Bureau of Nutrition Investigation demonstrated the high food values of Kafir corn and soy beans, and gave the open-minded some very good bread and cookies of her own baking to uphold the doctrine.

Miss Jessie Field, rural secretary of the Young Women's Christian Association, spoke with vibrant sympathy, thrilling from pathos to humor, upon the life of the country girl, her needs, her abilities, and the ways to develop in her an efficient womanhood which shall contribute to the solution of economic problems.

Miss Anna B. Taft of the Department of Church and Country Life of the Presbyterian Board of Home Missions revealed the vigor with which ministers are entering into the life of their parishes and making the church as broad as are the community interests.

Miss Fanny Clement, superintendent of Rural Nurses of the Red Cross Society, made obvious the efficiency of hygiene to increase the working power of farm homes.

Mrs. Marie T. Harvey's heroic and productive work with a one-room school in Kirksville, Missouri, bore testimony to the potential wealth of citizenship which, for lack of perception of what our boys and girls should have, we often allow to die down and perish tragically in childhood.

The Big Problem

The effect of "honest," substantial, and simple furnishings for the farmhouse in producing honest character and a big outlook on the big world was brilliantly presented by Miss Adah Robinson of the Oklahoma City School of Art.

These and the other inspiring addresses have been recorded in detail by

life productive, not only of crops but of leaders—men and women of vision who will perceive the largeness of their problem in relation to the world's welfare. To such conventions as those which assembled in Tulsa, for the purpose of enforcing these facts, the entire country owes its attention and its gratitude.

A Co-operative Chorus

By Anna Brett

IN Litchfield County, Connecticut, a region of small towns scattered among steep hills, there is a musical association that is not only attracting the attention of musicians but is worth the consideration of all interested in country life. Some years ago Mr. and Mrs. Carl Stoeckel had a beautiful dream. They wished to make a memorial for Mrs. Stoeckel's father, Mr. Rollin Battel, who had been a noble citizen of the State and an enthusiastic and skilled musician. Instead of some definite gift, a park, a building, an organ, they wanted something living, something that should be a growing part of all the lives it touched. In five towns were organized singing classes, called the Litchfield Choral Union, under the charge of one trainer. Seven hundred people gather in these classes all through the winter, many driving miles for the evening of singing. The Norfolk Festival, with which the year's work closes, takes place the last of May. Mr. and Mrs. Stoeckel have built what is called the "Music Shed," a great auditorium holding twenty-two hundred people. There gather the guests—for no tickets are sold—of Mr. and Mrs. Stoeckel, and of the Choral Union, with musicians from the Metropolitan Opera Company of New York City and noted soloists. Always a new work is presented, and the composer is given his introduction to the public under the very friendliest auspices, a matter which means much to the American composer and is likely to mean much to American music. Four hundred and twenty-five singers of the Choral Union give the choruses, and marvelous work they do. So magnificently trained are they that although the personnel of the chorus is not quite the same on the three evenings yet no difference in the tone is to be noticed. Besides the parts it has taken in the new compositions the chorus has sung "Elijah," "The Messiah," "Faust," and this year "Samson and Delilah." Truly Mr. and Mrs. Stoeckel were inspired. One cannot count the influence of this awakening of interest in great music, and when one thinks of what it means to have so many people giving an evening and more each week to



Tulsa, where the question alighted

a neighbor coming up or going down in the rattling elevator. The voice of a neighbor, I said, which means the voice of a stranger; neighbor and stranger are synonyms in New York.

These disturbances had no interest for Mr. and Mrs. Black; in fact, if they noted them at all it was in that spongy, absorbent part of their brains flattered with the name subconsciousness. Mrs. Black was stabbing the bottom of a frayed skirt with a benevolent needle. She sighed occasionally, and the sigh sounded less like the distress of a pricked finger than like that of a desperate mind. Mr. Black was seated at an office table, a fine mahogany affair surmounted by a sheet of beveled glass, looking over the monthly bills.

"We've got to draw in somewhere," he stated, putting his check book back into his pocket without writing in it, and thrusting a pile of papers away from him.

"Well," said Mrs. Black, "we've given up entertaining; we've almost given up meat; I don't eat lunch; the children aren't allowed soda water or candy, and our present cook lives on tea."

"I got these cigars three for a quarter," Mr. Black stated, pathetically, as he cut the end off of one of them.

The Voice of the Question Grows Louder

"And yet," continued Mrs. Black, with the shadow of a smile at her husband's contribution to the retrenchment, "and yet our bills are running about six dollars a month higher than they did last year."

"They're running about six dollars a month larger than my salary," groaned Mr. Black. "That's the rub."

After a few moments of silence they exclaimed simultaneously, doubtless from long established habit:

"What shall we do?"

Unanswered the question floated away, out of those quivering windows, past blazing trails of light, over vanishing skyscrapers, then down over scattered roofs and along gleaming lines of track, and all the time it gained volume. The two voices had soon become a chorus. By big houses and little houses the refrain was taken up: "What shall we do? How shall we buy food?" Finally, on our frontiers, answering voices arose from three organizations concerned with farm life.

Out in the oil and gas fields of eastern Oklahoma a new city prunes its wings. It is called Tulsa, and in 1900 it had 6,000 inhabitants, whereas in 1913 it had 45,000. For the moment it is of all our cities the one accomplishing the most rapid growth. It stretches in all directions miles of paved streets. Some of them are bright with store displays; many show the domes of churches, while low buildings of wood, brick, and concrete sit a little stiffly between as if they dreaded extinction in this progressive city as soon as any superior form of

no energy in the soil, no energy in character go unused. The soil of the desert is good; make it bear fruit and supply the market with more foodstuffs and new foodstuffs. Somewhere in every one of our daughters is the home-making instinct; develop and train it to attack with real interest the problem of how to live pleasantly on a given income. Somewhere in every one of our sons is the instinct of chivalry, the desire to serve women; arouse it and the wives of the new generation will have their efficiency doubled by a supply of labor-saving machinery in the home. The usefulness of our teachers has often been wasted because we paid them such small salaries and failed so absolutely to co-operate in their work that their ambitions were moved not by the passion for success in their present tasks, but by eagerness for new jobs; let us make the job of the country school-teacher worth while. The haven of religious service may be worked into any community; remove it from the chill of denominational quarrels, then; let our ministers gather into one fold the men and women whose desire is a more friendly, a warmer and more inspiring community life."

But how does this affect Mr. and Mrs. Black in their high-hung New York flat?

Dr. Henry J. Waters in his address to the Dry Farming Congress stated that rural progress means more to the city man than to the farmer. To be sure, unless he is a thinker he hardly realizes it, for the streets along which he goes and comes display stalls of vegetables, carcasses of animals, and innumerable eating places. Odors of cooking rise from numberless kitchens below the pavements under his feet. Famine seems indeed far removed from him. Yet there is hoarded there only a few days' supply of bread. In Indianapolis famine came so near that the court house was turned into a market. The world has overdrawn its bank account forty million dollars,—which is half the wealth of the United States,—and the farmer must pay in the deficit.

The Call For Leadership

Strange that such a superb task should not have aroused in him a more stinging pride in his profession, a larger vision of business, and a greater thirst to become a conscious leader in the economic world!

Strange, too, that to-day, when the lure of the professions is so strong for women, the profession of farmer's wife—more properly co-operator and assistant manager of the farm—has not wholly revealed its amazing possibilities and its unparalleled dignity! As Alfred W. McCann says, "the history of life on the surface of the earth is the history of food." It is the farmer and his family who supply food to the world, without an abundance of which, at moderate prices, civilization would eventually



The burning oil tank is a sight no one delights in seeing, spectacular as it may be, but the scene is not foreign to Oklahoma

most of the farm journals. The personalities of the workers, full, every one of them, of missionary zeal, have been given in pen portraits to those who were not able to be in Tulsa.

Tribute has been paid to the president of the International Association of Farm Women, Mrs. Belle v. D. Harbert, who, with a mind at once gentle and masterful, presided over the congress and guided it toward a larger future.

As the recording voices begin to hush, FARM AND FIRESIDE wishes to add this peroration:

The foremost economic problem in America to-day is that of making rural

training, then one understands the spirit of reverent enthusiasm that is so beautiful a characteristic of the Festival.

The plan is being taken up in other counties. Not every county may have a "Music Shed," nor an orchestra and soloists brought on from the Metropolitan Opera House, but the Choral Union, which is the core of the enterprise, and without which the gathering of the paid musicians would be a soulless affair, is possible. These and yearly concerts, bringing the whole county together, would have an untold influence in the enrichment of life for many regions where access to music is difficult.

E.W.

The Experience Bazaar

Editorial Note—Here is an open market for the exchange of experiences. Will you not bring your problems and leave them behind? Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

Back Yard for a Playground

DEAR FIRESIDE EDITOR: When an incorrigible boy of twelve was sent to the reform school for house-breaking a sympathetic relative said to me, "It is because he was raised in town. He had no playground but the street, and it was inevitable for him to go to the bad." I pointed out to her a family of very fine boys born and reared within the limits of the same small town. The two eldest were in college, the others, ranging in age from six to fifteen, were pure-minded, honest and gentlemanly. My friend replied contemptuously, "Yes, they are good boys, but they were brought up in the back yard!"

I resolved to make a study of the back yard which could produce such well-behaved children.

A Kingdom for the Children

It was found to contain several large trees and a number of boys besides those who called it home. It was, in fact, a center of juvenile sociability within sight and hearing of the mother.

The yard was made to seem set apart as a thing by itself and given a sense of privacy by a strong fence covered with morning-glories and other flowering vines. The children were taught from babyhood the limits of its boundary and did not go beyond it without the mother's consent.

Overcome Evil With Good

The sense of beauty and the love of nature were cultivated in this yard by a small well-kept plot of clover and a flower-garden. There was a play-house, a toy silo and a "play" well, all made by the boys.

At the time I was there the six-year-old was interestingly busy in a box of sand in the shade of tree. (It was a bottomless box, about four by seven feet and one foot deep.) The street had no attraction for him. Under another tree was an old-fashioned rope swing. The boys were "saving up" to buy a small tent.

Two boys of eight and ten played "teeter-totter" on a safely arranged board, having a genuine good time and out of mischief.

Others were coasting down a chute, whose upper end was securely attached to a ladder and whose lower end curved slightly upward to break the final momentum. This trough-like structure had

sides and, despite its exciting character, was without danger even for very little tots.

Within this yard was a parrot in a cage, some Bantam chickens, several white rabbits, a cat, a squirrel and a King Charles spaniel. The care of the pets gave the children regular duties to perform, in itself valuable training.

The Children's Lens

"What do they do in winter?" I asked. "Build snow houses and snow men, and pull one another about on sleds," was the answer. "Last winter they taught



Fun at home: a summer toboggan chute without snow or toboggan or danger

our young collie to run in harness. Oh, yes, the yard is big enough. Children look through a special lens of imagination that increases the size of everything."

While it is doubtless best for a child to have the freedom of a farm far from the temptations of the street, the back yard on a town lot offers a satisfactory substitute when parents are willing to take the trouble to make it safe and interesting for the children who play there.

T. L., Ohio.

DEAR FIRESIDE EDITOR: We settled the money question when we had been married one year. During that year we had been furnishing our home and buying many necessary things for the out-of-doors.

I thought we should start to save something, and it was decided that half of each check should be saved and half of the half saved should be for the husband and the other half for the wife. This has continued for seven years, and a nice sum has been put in the bank for each of us, later to be invested when safe investments are found.

I have handy work by which I can make plenty of pin-money, for good clothes and many luxuries. I do not have to ask the Goodman for money. Perhaps he is the more willing to give because I never do ask. But I do believe that if I manage successfully my part of the partnership work I am entitled to half of what is saved, not as a common fund but in my own name.

The time is coming when women will have rights. The first place to get them is with their husbands in the home.

No matter how much money I make by personal effort aside from the duties of wife and housekeeper, I do not spend it for the table or running household expenses. However, I try to spend it for there is such a thing as being inclined to save too much. One must combat hereditary tendencies, and one of mine is an inclination to save easily.

I grew up to believe a penny saved is as good as two earned. The husband's tendencies are just the opposite, thus I insist that we each have the same amount saved. We average four hundred dollars a year—two hundred dollars each. After our long experience it is a well-established rule and easy to follow. We could save more but we think we go this way but once and might as well enjoy ourselves, if we can do it honestly, and pay as we go and still save for the rainy day and old age.

A. S. L., New Jersey.

The Housewife's Club

ASCOURING CORK—Keep a large cork on the scouring board and use it instead of a cloth for scouring kitchen knives and forks. The cork can be rinsed off each time and is much more cleanly than a cloth.

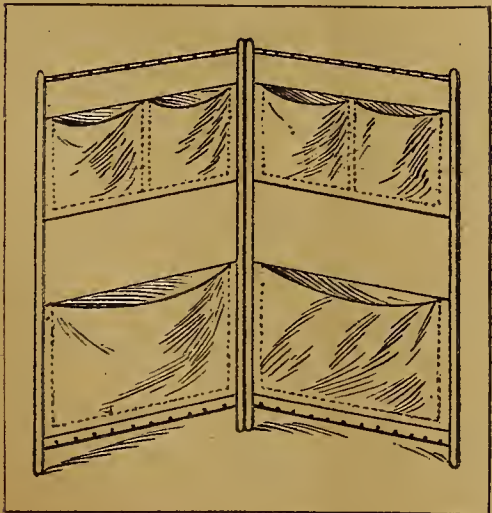
L. M., Pennsylvania.

WHEN BOILING HAM, TONGUE OR BEEF, let them cool in the water in which they were cooked and they will be deliciously moist and sweet in flavor.

Mrs. W. L. O., Arkansas.

USEFUL WORK SCREEN—A clothes bar can be utilized for this convenient work screen, or the framework can easily be made and put together.

Stain and varnish the posts, or cover with cretonne. Measure pieces of the screen, finishing the edges with hems. Six large pockets are made, four being attached at the top and two at the bottom. The top ones are to hold sewing utensils, the



large pockets at the bottom are for holding stockings, etc., to be mended, or something being made. Brass hooks may be fastened to the framework, for scissors, pincushion, or other articles.

TO REMOVE STAINS FROM SILVERWARE—Tarnished silverware placed in sour milk will come out in a few minutes as bright as new. It may also be cleaned without labor by immersing it completely for several hours in ordinary flour.

C. A. B., California.

WINTER CLOTHES LINE—How many farmers' wives have chilled their fingers untangling and putting up a line on the porch on a zero Monday morning? And who wants a line left dangling on the porch all the week? On each end of my porch I had placed three hooks. I cut my line in three equal pieces as long as the porch, and in the ends of each piece tied loops, and every Monday it is very easy to hook my lines up and take them down. The small things may be pinned on while in the house.

Mrs. D. W. H., New York.

TO SAVE THE TABLECLOTH—On the farm table where it seems a positive necessity to use tray cloths, I have used a substitute that gives a neat, trim appearance, whereas tray cloths are always getting pulled out of place and looking untidy. I buy a piece of table linen large enough to cover the top of the table and hang over the edges a hem's width. This small cloth is really easier to launder than several tray cloths, and if it is of the same pattern as the tablecloth it will hardly be noticed.

Mrs. D. W. H., New York.

CRANBERRIES, PLUMS, GOOSEBERRIES, OR GRAPES will not take so much sugar if a little cooking soda is added before putting in the sugar.

B. C., Kentucky.

BEFORE BLACKING STOVES melt a small piece of tallow and rub it well into the hands and around and under the nails. This keeps the blacking from getting into every line or crack (for it is almost impossible to keep from getting some black on the hands), and with warm water and soap the tallow and black wash off, leaving the hands as clean as ever.

Mrs. A. M. P., Missouri.

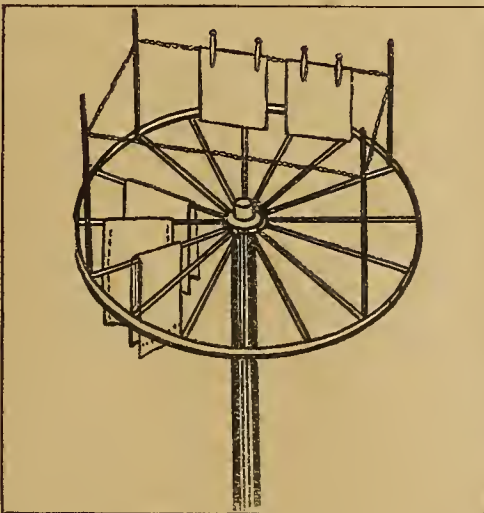
TO PROTECT BED QUILTS—A good way to prevent bed quilts or comforters from soiling is to make covers of lawn or muslin for the top part of them. Make them about a foot wide, so that when placed on the top edge of the quilt they will extend about six inches on either side. They can easily be slipped off and washed.

M. H. H., Pennsylvania.

SOGGY PIE CRUSTS—Even though she be an excellent cook, nearly every housewife will occasionally have her pies ruined by a soggy bottom crust. To overcome this possibility rub the lower crust of the pie with the white of an egg. This prevents the juice from soaking through, leaving the crust crisp and tender.

C. A. B., California.

A DRIER FOR THE KITCHEN TOWELS—If you happen to have a discarded buggy or wagon wheel, attach it to a post of convenient height and set it firmly in the



ground near the kitchen door. It will hold all the dish towels, and if more drying space is wanted a framework may be added like that shown in the illustration.

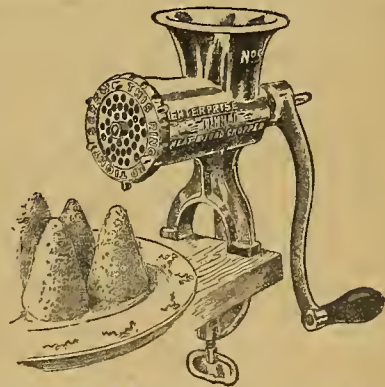


"Children take better care of their teeth than when we were young," remarked a grandfather as he saw the little ones of the family brushing their teeth.

"That is true," said the grandmother, "and children don't have the trouble with teeth we used to have. Their teeth will be firm and white when they are older, because they visit the dentist twice-a-year and use a good dentifrice every night and morning."

Perfect cleanliness of the teeth is essential to good health as well as to good looks. A delightful way to insure absolute cleanliness is the twice-a-day use of Colgate's Ribbon Dental Cream, the dentifrice with the delicious flavor.

You too should use
COLGATE'S
RIBBON DENTAL CREAM



Getting Meals for Company

Thanksgiving, Christmas and other holidays generally mean company and lots of extra work getting meals. If you had an

ENTERPRISE Meat AND Food Chopper

you would be delighted and surprised to see how easy it is to get a meal for a large company. You can have the daintiest dishes—good things that tickle the palates of your guests—and yet they will be inexpensive. But it is for everyday use that this chopper pays for itself over and over again.

If you do any butchering, you will find it just the thing for chopping sausage meat. It is the one chopper that gives the chopping cut—does not squeeze, mangle or crush. It really chops meat and other food, using a four-bladed knife that chops clean and fast. A minute is time enough to chop sufficient for a meal for a good-sized family. This chopper is without an equal. If you want a still lower-priced machine, ask to see the

ENTERPRISE FOOD CHOPPER. Costs from \$1.25 to \$2.25, according to size. Send 4c for "The Enterprising Housekeeper," our new cook book. Full of good things to cook and know.

Go to your dealer and he can show you the ENTERPRISE line

THE ENTERPRISE MFG. CO. of PA.
Dept. 71 Philadelphia, Pa.

DON'T PAY TWO PRICES

Save \$8.00 to \$22.00 on

Hoosier Ranges and Heaters

Why not buy the Best when you can buy them at such low unheard-of Factory prices. Our new improvements absolutely surpass anything ever produced. Save enough on a single stove to buy your winter's fuel. Thirty days free trial in your own home before you buy. Send postal today for large free catalog and prices.



Hoosier Stove Co. 126 State St., Marion, Ind.

BIGGEST PRICES!

Our Great 1914 Offer!!

BARGAIN!

No Money Down

WIRE & FENCING PRICES

ROOFING PRICES

LUMBER BUILDING MATERIAL PRICES

Here is the Greatest Sale ever advertised—the opportunity you have long sought for—a chance to buy staple lumber and building material—Roofing, Wire, Fencing, Furniture and Household Goods of every kind and description, in fact, Merchandise of every nature, at unheard of low prices.

We are determined that the Spring of 1914, will be the most successful in the history of this Great Company, and the Wise man will take early advantage of the great bargains shown in this advertisement.

You can order a complete carload of building material from us; including everything you need to construct and equip and we will ship it to you, without one cent cash in advance.

All we want to know is that the money will be paid us as soon as the material is received, unloaded and checked up.

Lumber Prices S-m-a-s-h-e-d

Yes, we mean smashed. Absolutely crushed to pieces. That's our policy. We quote prices on lumber that will positively save you big money. If you will send your lumber bill we will send you a freight paid price that will mean a saving to you of from 30% to 50%. Every stick is absolutely first class, brand new and fully up-to-grade such as you would buy from any reputable house in the United States.

We have determined that the year of 1914 is going to be the Banner year in our great lumber department. We have on hand 20,000,000 feet of high-grade lumber suitable for the construction of Buildings, no matter for what purpose intended. Come to our great yards in Chicago and let us show you this stuff actually in stock. No other concern in the world has a more complete stock of everything needed to build, whether Lumber, Shingles, Structural Iron, Plumbing, Heating, Doors or anything else that you may need. Do you know that lumber is getting scarcer and scarcer every year? Yet our prices are lowest and will continue so until our stock is gone. WRITE TODAY.

Shingles At Big Saving

We have a special lot of 1,000,000 5 to 2 10 inch Clear Shingles on which we are making an exceptionally low price of \$2.50. When ordering this item, specify Lot No. CD-700. This is not galvanized, but black steel roofing.

Order by Lot No. MS-40.

ROOFING PRICES SMASHED!

Galvanized Steel Roofing Is Fire, Water and Lightning Proof

We bought 20,000 squares of this Corrugated Iron Roofing, which we offer at this remarkably low price. It is new, perfect, and first-class, but light weight. The sheets are 22 x 24 in. x 1 1/4 in. corrugated. Our price of \$1.25 per sq. ft. o. b. Chicago.

When ordering this item, specify Lot No. CD-700. This is not galvanized, but black steel roofing. Write us today for our special FREIGHT PREPAID PRICES on new, galvanized roofing. We are offering prices lower than ever before offered in the roofing business. Galvanized roofing at \$2.75 per square and up. Ask for free samples. We can furnish anything needed in Roofing, Siding or Ceiling.

62c Per 108 Square Feet Buys Best Rubber Surfaced "Ajax" Roofing

Here again we show the lowest price ever known for roofing of quality. This smooth surfaced roofing we are offering is our one-ply "Ajax" brand, and the price includes necessary cement and caps to lay it; this price is f. o. b. Chicago; at 85c per square, we pay the freight in full to any point East of Kansas and Nebraska and North of the Ohio River, provided your order is for at least 3 squares. Prices to other points on application.

Roofing is guaranteed to wear as long and give as good service as any Ready Rubber Surfaced Roofing on the market. It is out in rolls of 108 square feet and contains 3 to 4 pieces to the roll. We have other grades of Ready Roofing, which we offer at prices easily 30 percent below regular quotations. Write today for free samples and Roofing Catalog. Fill in the coupon.

Fill in This Coupon

HARRIS BROTHERS CO., Dept. C. D. 28 Chicago

Send me free of cost the following catalogs. (Place an X mark in square opposite the catalogs you wish)

<input type="checkbox"/> Catalog of 50,000 Bargains	<input type="checkbox"/> Building Material
<input type="checkbox"/> Plan Book of Houses & Barns	<input type="checkbox"/> Roofing, Siding and Ceiling
<input type="checkbox"/> Wire and Fencing	<input type="checkbox"/> Plumbing & Heating
<input type="checkbox"/>	<input type="checkbox"/> Paint

My Name is.....

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County..... State.....

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CHICAGO HOUSE WRECKING CO

Now operated under the name of

HARRIS BROTHERS COMPANY

FOR 22 years the CHICAGO HOUSE WRECKING COMPANY has been well and favorably known to the public. During all these years the four Harris Brothers have been the executive officers and owners and for that reason have finally decided to operate under the name of HARRIS BROTHERS COMPANY.

There is no change in our business, except that in the future the four Harris Brothers will advertise and sell their goods, heretofore advertised and sold under the name of the CHICAGO HOUSE WRECKING COMPANY, under the new name of HARRIS BROTHERS COMPANY.

Why We Are Called the Great Price Wreckers

Consider what becomes of the stock of goods, when a manufacturer or big retail merchant goes bankrupt or "husted" as the saying goes. It is estimated that about ten thousand merchants annually meet with business disaster—this is why our company exists. If the stocks are sufficiently large and the goods are new and desirable, they find their natural way to our great forty acre plant for distribution at a small added profit, to our thousands of customers, who in this way get the benefit of wonderful bargains. In many cases our prices do not even represent the original cost of production. We stand foremost in our line. We recognize no competition. That's why we are called "THE GREAT PRICE WRECKERS."

Our Binding Guarantee

We guarantee absolute and complete satisfaction. There is no half way about this guarantee. Every purchase you make from us will be exactly as represented and you will be satisfied in every way, or we will make such just amends as are within our power. We will take back any unsatisfactory article at our freight expense both ways and refund your purchase price. We refer to our responsibility to the publisher of this or any other publication or any bank or express company and to the public at large.

We Sell Practically Everything

Our stock includes practically "everything under the sun." It's in truth, from a needle to a locomotive. No matter what your vocation, or what position in life you occupy, or what your business, or how great a merchant you are, you have use for us, and we have the goods that you can buy from us to a decided advantage. The quicker you learn to recognize this fact, the sooner you will be "putting money in your pocket."

Our stock includes Building Material, Lumber, Roofing, Sash, Doors, Millwork, Wire and Fencing, Hardware, Plumbing Material, Heating Apparatus and Supplies, Furniture, Household Goods, Rugs, Stoves and everything needed to furnish or equip your home, your club or hotel. It includes Groceries, Clothing, Dry Goods, Boots and Shoes, Furnishing Goods and every single article to clothe a man, woman or child. It includes Sporting Goods, Fishing Tackle, Hunting Outfits, Tents, Guns, Harness and Vehicles, Jewelry, Sewing Machines, Clocks; also structural iron needed in construction of buildings, bridges, etc. Machinery, gasoline, gas and electric power outfits. In fact you cannot think of a single manufactured article that we cannot supply you at a saving in price. Let us convince you—it means but little effort on your part to prove the truth of all we say. Write us today for our Catalogue and literature. Fill in the coupon shown below.

THE GREAT PRICE WRECKERS

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\$1,000.00 Saved
Everything arrived in good condition. I saved on the building; also heating plant and bathroom outfit about \$1000.00 as this kind of lumber would be very dear here.
Signed LEWIS YOUNG, Pennsylvania.

\$700.00 Saved
I am perfectly satisfied. Don't be backward in referring to me, for you have done more than you agreed to. I saved \$700.00 and also got better material, and a better house.
Signed JOHN J. DUNN, Ohio.

Satisfied With Furnace
The furnace I got from you is perfect in every way. I would not be without it one winter for double its price. If farmers only knew how easy it is to install it, they would not be without it.
Signed HENRY D. CHARTER, Canada.

Used 12 Years and in Good Condition
Some 10 or 12 years ago, I bought quite a hill of Black Corrugated Roofing from you, and only painted it twice since I laid it, and it is in just as good condition today, as the day it was laid. Please send me your catalog, as I expect to put up a barn next Spring and am looking for something for a roof as good as that bought from you last time.
(Signed) W. W. STODDARD Ohio.

Will Order More
Am pleased to say the roofing all here and in splendid shape. Allow me to congratulate you on prompt delivery. You will receive more orders from me.
(Signed) D. DUCELLO.

Recommends Our Paint
I have used your Premier Paint in this salt atmosphere for the past four years and find it better for this climate than any paint I can buy, no matter what the price. (Signed) W. A. WEIDE, Florida.

\$13 BUYS COMPLETE BATHTUB

This is a white enameled, cast iron, one-piece, heavy roll rim bathtub; fitted with the latest style, nickel-plated trimmings, including Fuller double bath cocks for hot and cold water, nickel-plated, connected waste and overflow and nickel-plated supply pipes. It is 5 ft. long and is good enough to answer the needs of any one. Lot 5CD-101.



Hot Water Heating Plants

We are headquarters for steam, hot water and warm air heating plants. They are suitable either for new or old homes. It is easy to install one of these plants in your old building. For this great Fall Sale of ours we are offering a warm air heating plant large enough for the ordinary 5 room house, with all necessary plans and complete instructions for installing, for \$45.00.

Iron Pipe and Fittings

Good iron pipe in random lengths complete with couplings, suitable for gas, oil, water and conveyance of all liquids; size 3-8 to 12 inches; our price on 1-in. per foot 8c; 1 1/2-in. at 4c per foot. Complete stock of valves and fittings. Send us your specifications.

AXMINSTER RUGS at 75c

We bought at New York Auction an enormous stock of high grade, brand new rugs and floor coverings. This is a sample of our money-saving bargains. Write for complete Free Rug Catalog, showing actual colors.

FURNITURE

We are the World's Bargain Headquarters for the outfitting of your home, club, lodge or hotel, from the very latest to the finest. An assortment of Household Goods and everything such as will be found in no other institution in the land. Write for free copy of our Furniture and Household Goods Catalog.

A THOUSAND PAGES OF BARGAINS

Write us today for a copy of our Great Big Spring Price Wrecker now off the press. It is the most stupendous Book of Bargains ever produced. It contains a thousand pages of matter true to life and describes the merchandise we are offering for sale so plain and correct that you will experience no trouble in making your selections.

It is a wonderful book of Bargains and can be used every day of your Buying Life. You need it whether you are a customer of ours or not.

\$759 Buys the Material to Build This House



This Is Our House, No. 6A
A beautiful up-to-date full 2 story, 7 rooms and bath, home. The biggest bargain in the world. Copied and imitated all over the U.S., but our price and quality cannot be equalled. The price is easily 25 to 50 per cent below local dealer's price. Immediate shipment right from our Chicago stocks, where you can come and see it loaded. **NO MONEY DOWN.** \$2.00 buys perfect Blue Print Plans, complete specifications and detailed descriptive material list, with a refund of \$1.50 if you do not like them.

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Original Methods

We are the originators of a system of selling practically complete Houses direct to the consumer at a great saving.

We eliminate all in-between profits. We sell and ship direct to you from our own stocks. Great care and study has been given all our Plans. Economy is the watchword both in materials and construction.

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Our Binding Guarantee both as to quality and quantity goes with every sale.

Write us for letters from people in your vicinity who have bought from us. We have thousands of unsolicited testimonials.

SPECIAL INFORMATION

If you intend building, you will lose money if you don't write us at once. Tell us what you want. We will answer you promptly and give you valuable information regarding building. Send rough pencil sketch showing the kind of house you want. We will make you a freight paid price that will save you big money on material necessary to build same. Every stick first class.

If you intend to make improvements, write us what they are, and we will help you to save money on your purchases.

Our FREE BOOK OF PLANS

Our Book of Plans contains 120 pages of different kinds of buildings. Everything from a 2 room Portable House for \$147.50 to the finest kind of a residence. Houses are completely illustrated showing the floor plans, prices, etc. And it's free.

Wire and Fence Prices Smashed!

Barb Wire Less Than 2c Per Rod

New Galvanized, heavy weight barbed wire, put up on reels about 100 lbs. to the reel. Lot 2-CD-36 per 100 lbs. \$1.95. Galvanized barbed wire, lightweight, best grade, best made. Put up exactly 50 rods to reel, 2-point barbs. Lot 2-CD-28, per reel, \$1.40.

WIRE NAILS, Per Keg, \$1.28

5,000 kegs, put up 100 lbs. to the keg mixed, all kinds together, regular nails, such as made by nail factories. Lot 2-CD-33, price per keg, \$1.28. 1,000 kegs of 10 penny-weight regular new wire nails, 100 lbs. to the keg, while they last, per keg, \$1.85. Write for our free Wire and Fence Catalogue. Gives valuable information to any land owner. Fill in the coupon below.

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FARM AND FIRESIDE

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Learn About Lime

Your soil either smiles at you or frowns, not literally but in the way it acts. If you train yourself you can understand the moods of your soil just by the way it turns as you plow it and the spirit with which it yields crops. Keep your fields happy and generous by lime, the great soil sweetener.

Two years ago we began a national investigation of the lime question, including the cost and benefit of liming and the net profit and loss following its use. "Does My Soil Need Lime?" is the title of the article that will tell you all sides of this vexing but important question, in the next issue.

Kansas Down and Out???

We are of the opinion that she is very much awake and alive. However you view the question, do not fail to get the next issue of FARM AND FIRESIDE. In it will be a story that will please you if you are interested in the farm and what is produced there. Don't fail to get that issue!

New Way to Fight Lice in the Poultry House

Two Eastern poultry-raisers are enthused over the way they get rid of lice and mites. One does it one way and the other does it another, but then one is bothered with mites and the other with lice. Probably both people have had experience with both pests. This expression of their experience is worth attention.

Go to the Cow!

There is a general belief that the dairy cow will bring to the farm the greatest of prosperity. In fact, it is the faith many a man has in the cow that leads him to follow the dairy business. At least if he did not have any faith he would certainly fail. A Nebraska man tells how he followed the line of his faith and succeeded. It is a good story.

How to Care for the Colt

Doctor Alexander gives to the readers of FARM AND FIRESIDE some very pertinent facts as to the care of new-born foals. Directions are complete and explicit.

When is an Insect Beneficial?

That is a pretty hard question. Some insects are never beneficial as far as we are aware. But a friend of the nature world gives us a story of a fine little insect that is doing much good all the time. In fact, if you grow figs successfully you must have as a friend this fly.

Does a Greenhouse Pay?

A great many of us face that question. Mr. Greiner will soon tell what he thinks about it, and give the advice of an old hand at the game.

Do You Know When Seed is Cheap?

You may be interested in the experience of a man who thought he was getting cheap alfalfa seed and found that it cost him almost a dollar a pound. There were a number of holes in the skinner, which he didn't see.

An Adventure with Stripes

It is a commendable ambition to lay up money for an education, but Penelope's measures were somewhat impetuous, as we shall relate in her experience with a convict.

What They Sowed and What They Reaped

The life history of a grain of barley and a grain of corn will be of interest to boy farmers.

New Methods

A new method of making school work more far-reaching in its influence on practical life will be discussed.

The Call of Spring

Little fingers will be taught how to celebrate Easter, and how to make the gardens bloom.

How to Deprive Moths of Food

Often we do in a complex and difficult way what is capable of being done simply. A contributor has a new and practical idea about putting winter garments where they are moth-proof.

WITH THE EDITOR



The Liberty of the Dog Owner

Mr. John Davidson of Mercer County, Ohio, disagrees with us on the subject of dogs and their control. He regards the policy

advocated by us as an infringement of the liberty of every man to keep "on his place what he wants to."

Whose liberty is to be preserved, that of the man who wants to keep dogs, or of him who desires to keep sheep? Has a man a right to keep rattlesnakes by the roadside because it is his place? or a mad dog? or a bull that breaks out every day? or a vicious dog that bites people?

And if dogs were kept on their owners' premises there would be no sheep-killing worth mentioning. It is precisely because people don't keep them on their places, but let them run on other people's lands, that we demand legislation which will put the fear of consequences into the hearts of dog owners. A letter from Mr. H. C. Wilmarth of Massachusetts is so strong as a criticism that we publish it in full:

"I Ask, Is Your Advice Just?"

I have taken FARM AND FIRESIDE some thirty years, and am subscribed ahead into 1927. Will you kindly give me a word on the FARM AND FIRESIDE discussion of the dog problem?

For more than six years I lived in a place where about every farmer kept sheep and every farmer kept one or more dogs. No license was required on dogs, but every stray dog was treated as a wolf. The only protection any dog had was to stay on his own land or with a master. One day I was sent to look for a flock of sheep. I and a companion became convinced that dogs had been killing some of the sheep. We met a farmer on the road and told him our troubles. He laughed at the idea of dogs tearing the sheep, and told us that if ill had befallen them we could rest assured that dogs were not the cause. And he was right.

We have very little trouble with the wild dog, the wolf, for we go after him in a businesslike manner, and in this work the domestic dog has been and is our best help. Now after the dog has helped you to so thoroughly exterminate this enemy of the sheep, you are in favor of exterminating the dog just as thoroughly. Gratitude! No wonder you say, "The more I see of some men the better I like the dogs."

Probably more than ninety-nine per cent. of the sheep-tearing dogs come from the half-domesticated dogs, i. e., the abandoned dogs, the stray dogs, and the worthless dogs that by reason of their worthlessness are neglected by their owners and allowed to roam the streets and the woods hunting much like their wild brothers, the wolves. Such dogs are seen in the streets of every village, often attacking automobiles, motorcycles, bicycles, teams, pedestrians, often dodging into yards to chase and kill hens, etc. These are the dogs you want to get after.

The dog is pre-eminently the poor man's friend and companion. Do not take from him the dog he has, but prevent him from getting another, is your advice. Is that just? Do not take from him the money he has got, but prevent his getting any more. How does that look to you? One is as just as the other. The domestic dog is already paying for the damage the outlaw dogs are doing. They are building and furnishing our libraries and educating our children, and your idea is to tax them still more heavily, but you say nothing of the outlaw dog.

Did you ever shoot a rifle? The great secret is to aim at just what you wish to hit. If you have a grievance against the dog, aim at that grievance, not at dogs in general, nor at the dogs you do not wish to hit.

Why do you not strike the evil where the evil exists? Enforce the law that each dog shall wear a collar bearing the owner's name. Keep vicious dogs off the streets, prohibit dogs from banding together in the streets or going hunting wolf style. Have a state officer to whom a citizen can appeal if a local officer refuses to do his duty. I made eleven separate complaints of such a dog to town officers, and not till he had bitten a woman on the street was he proved to be without an owner.

Whatever you do, do not seek to punish tax-dodging dogs, lawless dogs, or wolf dogs by increasing the tax on law-abiding dogs, nor by adding to the dead-letter laws we already have on the subject. Such laws always hit the law-abiding and do not trouble the lawless, tax-dodging dog.

What is the Dog To-day Worth?

We are willing to have the proposed laws so framed that they will exempt from its penalties all dogs which have helped exterminate the wolves which used to afflict us. But we are not much inclined to give to afflict us. But we are not much inclined to give the dogs of to-day any credit for what their ancestors did to the wolves. It is just such loose sympathy as this which has always prevented us from securing a sensible code of dog laws. Mr. Wilmarth is only partly right in thinking that it is the untrained, uncared-for dog which does the damage. We have the testimony of many sheepmen to the effect that all sorts of dogs kill sheep, even the pure-bred and aristocratic dogs of the towns, and the noble collie. It is true, however, that it would help things greatly if the canine wails could be destroyed.

We do not favor the extermination of dogs. We would not make the possession of the dogs now owned and loved especially difficult. But we would enact laws for the strict registration of all dogs, and the slaughter of all ownerless and half-wild ones. In this we think Mr. Wilmarth will agree with us. We say to Mr. Wilmarth and all other dog owners, "Keep old Rover as long as he lives, if he is a law-abiding dog. But when the time comes for giving him a successor we shall make the tax on him higher. We shall make it so high that you won't give him any successor at all from any mere whim. Rover's successor will be a dog which you will be willing to pay a good stiff tax on." All dog lovers ought to be with us on that program.

How All Dogs Are Alike

We agree with Mr. Wilmarth that all dogs should wear a collar bearing the owner's name and the number of his license. Everybody ought to agree with him as to the desirability of keeping vicious dogs off the streets; but as nobody will admit that his dog is vicious, this means all dogs. As all dogs must be kept confined if they are to be prevented from banding together, Mr. Wilmarth will not disagree with that. And we believe that we should have state officers for the enforcement of these laws, not when the local officer fails to do his duty, but all the time. As for Mr. Wilmarth's suggestion that a legal distinction can be made between the good and harmless dogs and the bad and harmful ones, we do not believe that it is possible. The laws must apply to all dogs.

Herbert Quick

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PUBLISHED BY
THE CROWELL PUBLISHING COMPANY
SPRINGFIELD, OHIO

Branch Offices: 381 Fourth Avenue, New York City; Tribune Building, Chicago, Illinois
Copyright, 1914, by The Crowell Publishing Company
Entered at the Post-Office at Springfield, Ohio, as Second-Class Mail Matter

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One Year (26 numbers) 50 cents
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Single Copies, Each . . . 5 cents

Subscriptions and all editorial letters should be sent to the offices at Springfield, Ohio, and letters for the Editor should be marked "Editor."

Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVII. No. 12

Springfield, Ohio, March 14, 1914

PUBLISHED
BI-WEEKLY

Little Social Neighborhood Fairs

THE county fair of years ago was a social affair—and to a great extent it is so still. But most of these exhibitions have become so large that the sense of neighborhood is lost. They are just as valuable as ever, and in a big way more so; but the point here made is that the big fair serves in a big, institutional way, and not in an intimate sociable way. The neighborhood fair is coming in to take its place as a social event.

Every neighborhood should have its little fair. Generally it is better to make it a one-line affair. Then it won't get out of hand by becoming overgrown. Make it a calf show, or a contest in horses or colts. Whatever is the line of most enthusiasm in the community is best; but when the boys with good opinions of their colts have had a successful fair the women and children with good poultry will find themselves able to equal it.

Have good expert judges to tell what a good animal or bird is, some talks on matters relating to farm life delivered by good speakers, and plenty of music and eatables. There's more fun and more benefit in it than in going to the state fair. There will be more of these little social neighborhood fairs as warm weather sweeps up from the South this year than ever before. Why not get ready for a good time of this sort now?

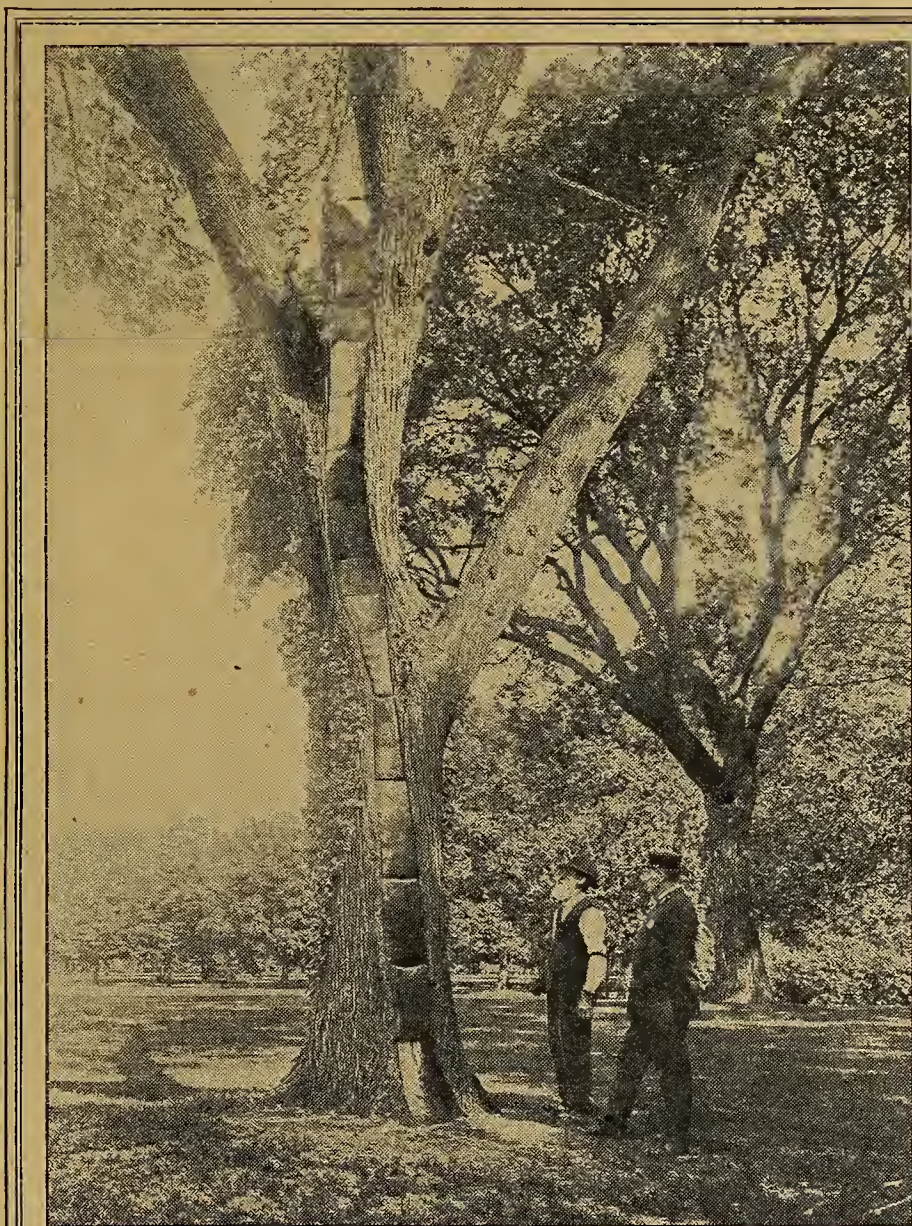
A Danger Passed

IT WAS certain that the interests opposed to the efficient development of the parcel post would sooner or later make an attack upon it. That attack has been made and is now to be counted among perils escaped, rocks evaded, storms weathered. That Senator Bankhead of Alabama was active in the movement to forbid the Postmaster-General to make changes in zones, rates, and weights was quite to be expected; but that Hoke Smith of Georgia and Joseph L. Bristow of Kansas were with him in this sortie against the farmers' express service is nothing less than astonishing. Those Senators who owe their constituents explanations for voting against the power of the Postmaster-General to give parcel post expert control are Bankhead, Brady, Bristow, Bryan, Catron, Clark of Wyoming, Cummins, Dillingham, Gallinger, Hitchcock, Hollis, Hughes, Lippitt, Lodge, McCumber, Nelson, Oliver, Page, Perkins, Ransdell, Sherman, Simmons, Stephenson, Sterling, Sutherland, and Weeks. The vote was 28 to 27. To charge these men with bad faith is something one very much dislikes to do. To charge them with blind partisanship is impossible in view of the fact that party lines were ignored. To find adequate explanation in their speeches is impossible. The whole attack remains a political mystery which these Senators should be called upon to explain when they come before their people for re-election.

Lumber Dealers Guilty

THE Supreme Court of Missouri has found twenty wholesale lumber companies guilty of violation of the state anti-trust laws. They were fined from \$5,000 to \$50,000 each, and judgment was entered, ousting them from doing business in the State; but

the ouster was suspended on condition that the fines be paid. The fines amount in the aggregate to \$436,000. The offenses for which they were convicted are price-fixing by means of an association price list, curtailing production of lumber to boost prices, entering



Tree Surgery in the Capitol Grounds, Washington, D. C.

THE officials in charge of the U. S. Capitol grounds at Washington, D. C., have recently come to realize the necessity of ministering to the needs of the aged and ailing trees which surround the meeting place of Congress, and some of the most expert "tree doctors" in the country have been called in consultation.

The fact that a number of the trees in the Capitol grounds—for instance the famous elm planted by George Washington—have historic associations has prompted a liberal expenditure to save these landmarks. In many instances decay had proceeded so far that it was necessary to make great cavities in the trunks of the trees, and these cavities were filled with cement just as the cavity of a human tooth is filled by a dentist. Further protection was sought in many instances by a tin sheathing covering the full limits of the portion of the tree trunk which had been subjected to such surgical operations.

into joint trade agreements with the Yellow-Pine Manufacturers' Association and various retail dealers' associations to fight any advance of co-operation.

Such suits should be brought in other States than Missouri, and pushed to judgment, if the laws permit, and if they do not, adequate laws should be enacted. Whether these nefarious practices are carried on in all the States we do not know, but that they exist in most of the States into which lumber has to be shipped for local purposes is well known. Farmers' co-operative elevator companies in Iowa, Nebraska, Minnesota, the Dakotas, Illinois, Indiana, Wisconsin, Montana, Oklahoma, and elsewhere have been forced to buy lumber by stealth of concerns which took their business lives in their hands whenever they shipped a car. The victory in Missouri is a victory for these farmers' organizations—in Missouri. But what about other States?

A Successful County Farmers' Agent

ON ANOTHER page of this issue is a letter from Mr. "G. L. R." of Frederick County, Virginia, reporting the results of two years' work in that county of Mr. C. R. Koontz as the county agent of the farmers. Such work is certainly valuable, and we congratulate Frederick County. The letter is from a farmer, and voices the farmer's sentiments. We should like to have more reports from our readers on the work of the county agents. Unless we get the ideas of the farmers themselves we can scarcely tell whether this work is satisfactory or not. Please write us your true feelings about it. The county-agent movement is spreading over the United States so rapidly that we cannot know too much about it. If it is a good thing in your county let us know about it, and tell us what the good things in it are. If it seems to lack some element of success tell us of that too. You may be sure that your letter will be read with interest.

THERE are now 5,000 Jewish families engaged in farming in the United States. They are said to be prospering. It is safe to say that they are. Whatever business the Jew undertakes, he studies.

Meat-Animal Shortage

THE country will be startled by the report of the Department of Agriculture that the country is more than eighteen million meat animals short. That is, allowing for increase in population, we are short of sheep, cattle, and swine to that enormous number as compared with conditions in 1910. For each hundred people in the nation it would take nine beef cattle, three hogs, and seven sheep to give us as many as we had four years ago. This decrease is dramatic and almost astounding.

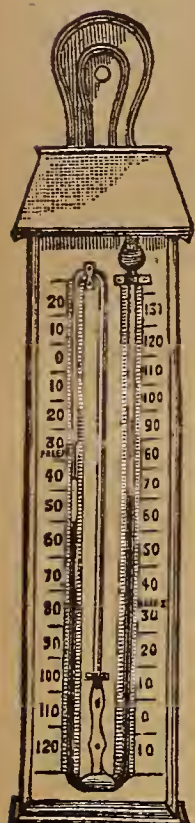
The Department gives eight reasons for the decrease: plowing up of Western ranges; shortage of forage from drought; increase in price of land, farm labor and feed; decline of stock-raising in the South and East because of the poor marketing facilities resulting from the monopoly of the meat business in the great packing centers; the temptation to sell stock at high prices; enormous losses of hogs from cholera; the competition of other products than meat, owing to high prices.

All these are only symptoms or mere eddies in the great current of causation. The chief reason lies in the fact that the farms of the nation are going into the hands of tenants under a lease system which forbids the growing of sheep and cattle, and renders it more profitable to the farmers to skin off as much as possible in the year or so of tenancy, sell it and get the money. Note the fact that the great shortage is in cattle. The cattle business requires long tenancy and years for the turn of the money invested. The Department speaks of the loss in hogs by cholera; but in spite of this, in hogs, which the tenant farmer can grow more successfully, the shortage is only a third as much in numbers as in cattle, and probably not a twentieth as much in meat. Give the American farmer a land system which will make cattle-growing profitable and he will grow cattle. He knows his business better than most of those who find fault with him. To appeal to him to grow cattle is useless while the tenant system makes cattle-growing for millions positively out of the question.

Keeping the Frost Away From the Fruit

The Orchard Should be Well Selected and Then Protected if It is to Pay Dividends

By J. E. CHURCH, Jr., Meteorologist Nevada Agricultural Experiment Station



Six's Maximum-Minimum Thermometer

THESE words are written to the farmer and small orchardist who has lost his grip in fruit-growing. The large orchardist needs no advice, for the necessity of succeeding has already forced him to solve most of his difficulties.

One of the striking phenomena in agriculture during the past decade has been the marked decline in the number of apple and pear trees in bearing, despite the rapid increase in population and the fact that the market can be developed to twice its present size. Another phenomenon, rising like a cloud, as yet no larger than a man's hand, is the marvelous development of scientific fruit-raising in the mountain valleys of the Continental Divide and the Pacific coast, despite the heavy handicap of transportation charges to the Eastern market.

The reason for this is simple. The Westerner has met the problems of insect pests, frost, and market with characteristic combativeness, and by raising a superior product is winning out with a considerable margin to spare. The Easterner, perhaps because he has depended largely on diversified farming, has permitted his orchards to succumb with little effort to adapt its methods to new conditions.

The factor that determines success or failure in the raising of fruit is the elimination of frost, for the havoc that can be wrought by frost far exceeds that possible through any other single agency and usually all other agencies combined. To eliminate frost, either a frostless belt must be found or orchard-heating must be practiced. Although an absolutely frostless belt probably does not exist in the United States except in the far South, the judicious choice of belts and slopes relatively free from frequent frosts and the use of adequate equipment for orchard-heating will practically assure the prevention of frost and eliminate the element of uncertainty that has made the expenditure of money on the orchard precarious.

How feasible and economical the heating of an ordinary orchard is can perhaps best be illustrated from the writer's experience during the past three years.

This is a small, unprotected city orchard of twenty-one trees that bore a full crop of blossoms every year, but on account of frost at the critical period failed nearly six years in seven to bring them to maturity. So tantalizing did the orchard prove that finally shade trees were planted in the orchard area for the purpose eventually of supplanting the fruit trees. Soon afterward systematic orchard-heating was begun to demonstrate the writer's belief that after all the frequent losses of the preceding years had been quite unnecessary. The trees were of various kinds and the fruit was very ordinary in quality. Furthermore, six of the trees were either young or so situated near out-houses that heaters could not be placed sufficiently close to them to obtain the best results.

The seasons of 1911, 1912, and 1913 furnished weather quite suitable for testing every phase of orchard-heating. In 1911 killing frosts were frequent and persistent at the time when the blossoms and setting fruit were most susceptible to injury. Minimum temperatures of 25° and 26° F. were encountered once each, and 28° twice, while temperatures of 29° and 32° were encountered frequently enough to cause a total of eight heatings. Three hundred and fifty-eight gallons of fuel oil were used at a cost of \$16. Fruit was sold from this orchard to the amount of \$30, and sufficient was stored away to last the family of five the entire winter.

The History of 1912 and 1913

In 1912 seven frosts occurred after the fruit buds had begun to appear, but no frost of consequence occurred after the blossoms, excepting plums, reached the stage of full bloom. These frosts ranged from 21.5° F. through 25.9°, 27.4°, 28.5°, 30°, to 31.2°. For fear that the blossoms might be injured, heating was resorted to, a total of seven heatings being employed. One hundred and sixty-two gallons of oil were used at a cost of \$8.10. When the temperature was above 28° F. only the peach, pear, plum, and early apple trees were protected, for the other blossoms were plainly too dormant to suffer injury. Since other orchards where heating was not employed bore a heavy crop of late fruit, it was evident that the heatings had in the main served no useful purpose except being precautionary.

In 1913 the frosts were again confined to the early portion of the season, and the late fruit would again

largely have escaped had not the frosts been about three degrees intenser than usual, thus catching the buds that were just unfolding. Several orchardists who were still impressed by the escape of the blossoms the previous year decided to delay heating until a later frost. The unexpected fall of the temperature on that night to 22.8° F. killed practically all of the buds "in the pink," and but few were still dormant.

The writer, owing to absence from town, had been unable to protect his early fruits during two previous frosts of 27° and 25° F., and so lost practically all of the pears and one half of the plums. An inventory on his return indicated that the early apple trees had lost nine blossoms out of ten, and the others only one out of ten. A splendid showing for the heaters!

To protect the remainder of the blossoms three heatings were necessary. One hundred and seventy gallons of fuel oil were used at a cost of \$6.80. The price of the early fruit was high because of its scarcity. From the pear, plum, and early apple trees fruit was gathered to the amount of \$11, and from the later trees 42 boxes of apples, one tree bearing 8 boxes and another 15. If the orchard had been properly sprayed the value of the fruit would have been many times the cost of heating, and if the orchard had been protected from the first two frosts the value of the early fruit alone would have doubly repaid the entire expenses of heating and spraying during the season.

The comparative value of the heating this season is shown by the fact that an adjoining orchard of similar size and quality, that lay in the drift of the smoke, bore 28.5 boxes of apples; but of these, 20 boxes were gathered from the row nearest to the orchard heaters, and 4.5 boxes in the area farthest from the smoke.

Destruction by Frost was Evident

In another tiny orchard, a block distant, wholly unheated, an early apple tree that bore 9 boxes a year ago bore only one half of a box this year, and a late apple tree that had borne 12 boxes produced only two apples. Likewise two Bartlett pear trees that bore a total of 12 boxes of pears last season bore one lone pear the present season. Although some allowance should be made for the overproduction the preceding season, the destruction wrought by frost is plainly evident.

Since the frost conditions in this portion of Nevada are nearly as bad as the worst where fruit is grown, the uniform success attained in the writer's orchard can be duplicated elsewhere, providing the single factor of wind is controlled.

A windbreak is the first essential in obtaining immunity from frost as well as from blasting by hot dry winds. However, it should be of sufficient height and density to break the force of the wind for some distance above the ground, for only in this way can the smoke and heat reach the upper portions of the trees before being swept along in the current of the wind. Furthermore, only by the use of windbreaks can the consumption of oil on windy nights be kept within the

bounds of reasonable expenditure. To illustrate, when the wind over the heater is thirty miles per hour the fuel is consumed three times as rapidly as on a calm night, without commensurate gain in heat.

On the other hand, when the frost is light and the wind mild the windbreak without orchard-heating may become a menace rather than a source of safety, for it tends to deaden the light breeze that otherwise might mix the super-cooled air at the surface of the ground with the warmer air above. But since the orchardist must plan against the unusual frost the windbreak is an absolute essential. The fuel necessary to heat up the orchard at times of extreme tranquillity due to the presence of the windbreak is a trifle when compared with the enormous expenditure for fuel that would sometimes be necessary in times of strong winds if there were no windbreak to check them.

What to Use as a Windbreak

The best hedge is the evergreen, particularly the spruce or the fir, but its growth is so slow that some quick-growing tree or shrub should be planted at least temporarily. Since the deciduous trees have not yet come into leaf when their protection is most needed, those whose branches form a natural mat should be selected. For use near the ground the willow, Russian oleaster and mulberry, and the barberry are perhaps best. However, the Russian mulberry is easily winter-killed where the temperature is unusually low. For use as an upper story, or even as a complete hedge, the

Lombardy poplar has no peer except the eucalyptus. The latter, however, is confined mainly to the Pacific coast.

Long experience has demonstrated the superiority of the oil heater over all other devices. In its most efficient form it can be lighted quickly, it can be perfectly regulated, it has a large fuel capacity, and requires a minimum of attention. The convenience of oil heaters where sod is on the ground is evident.

Coal heaters, on the other hand, are slow to light, slow to respond to sudden demands for more heat, and cannot be extinguished instantly. They should be used only where coal is manifestly cheaper than fuel oil.

Wood, such as cordwood and brush, can be used where available or necessary, but the fires should be small and close together rather than large and far apart. The fires also must be carefully tended to assure an even heat.

Manure and wet straw are reliable only when the frost is light and a smudge is sufficient to prevent the temperature from falling below the danger point. Smudges can also be used to prevent frozen blossoms from thawing out too rapidly in the morning. But failure so often attends efforts to save fruit after freezing that it is the part of wisdom to prevent any freezing at all.

The most powerful and efficient oil heaters are probably the Hamilton Reservoir Orchard Heater and the Hy-Lo, both built by the Hamilton company. The 3-gallon Hamilton heater should burn under normal conditions of wind and frost about six hours, while under mild conditions it may burn twelve hours. The 6-gallon Hamilton heater is more powerful than the 3-gallon size, and

provides double the amount of oil for emergencies.

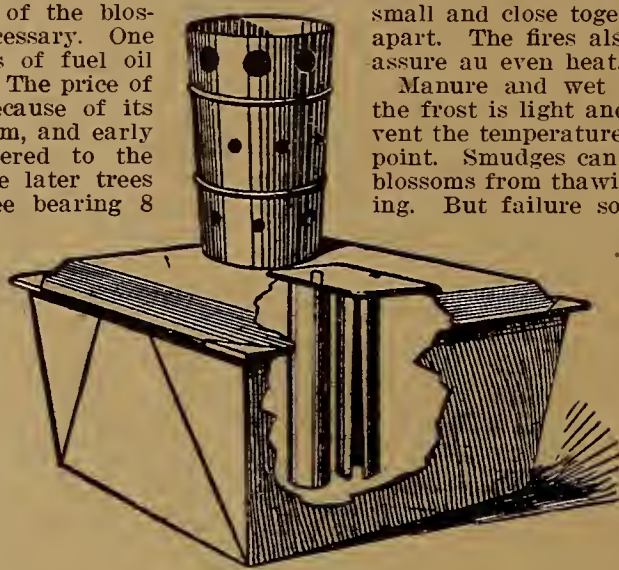
The Hy-Lo, in the 8-gallon size, has a greater burning capacity than either, and is said to give off an intenser heat with less consumption of fuel. Under high flame it is rated as having a capacity of twelve hours maximum and under low flame twenty-five hours minimum. Thus in crises there is no need of additional help to refill the heaters during the night, and during a series of light frosts the heaters will not require refilling for several days. A small heater, though less expensive to purchase, is a precarious investment, for it may mean the loss of the crop. The larger heaters can also be more readily cleaned of the tenacious deposit of asphaltum that gathers in them during the season.

Fuel oil of low specific gravity, such as No. 21, is not only cheaper but also more efficient than oil of higher grade, for it throws off a denser smoke and consequently makes a better canopy to retard radiation and shut in the heat of the fires. During the past three years' experimenting no injury from soot to either blossoms or fruit has been noticed. It is possible, however, that citrus fruits might be stained thereby. Explosions in the oil can be avoided by allowing the water to settle to the bottom of the tank and drawing it off before using the oil, or, in case water has already found its way into the heaters, the occasional stirring of the burning oil when it threatens to boil over will release the steam and relieve the tension. A hoe is a most efficient tool for stirring the oil.

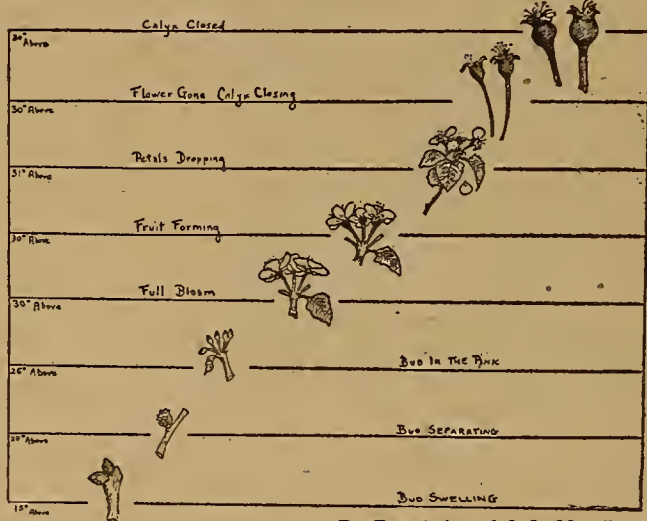
Number of Heaters Required

One heater should be provided for each tree, and a row of heaters around the orchard if the windbreak is deficient or the wind varies in direction. Some orchardists place a double row of heaters on the windward side; 100 heaters per acre should be sufficient for most emergencies. Where possible the individual heaters should be so placed as to throw their heat and smoke among the blossoms to warm the air in contact with them. If the orchard is uneven in quality or bearing it is wise, if any alarm is felt for the safety of the whole, to concentrate the heaters around the more profitable trees.

The simplest and speediest method of lighting the heaters is to use a trigger gasoline can and a torch. The torch can be made from a piece of heavy wire or gas pipe and a corncob or piece of waste. Under ordinary conditions the torch need only be dipped in crude oil; in case of high winds an occasional spurt

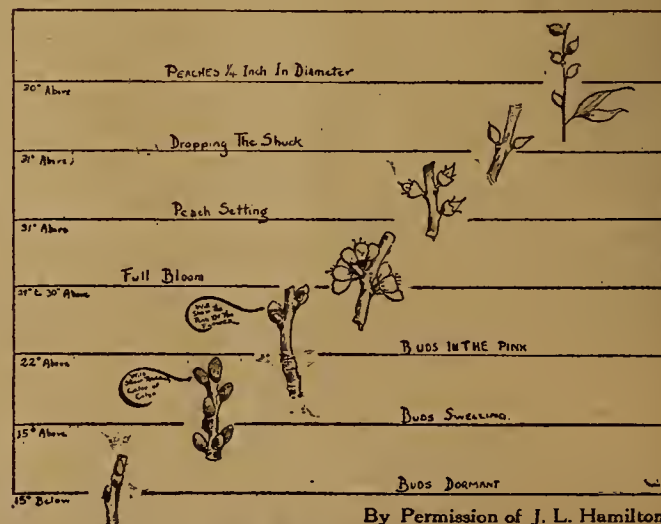


The Hy-Lo—8-gallon size



By Permission of J. L. Hamilton

When smudging is necessary for apples and pears



By Permission of J. L. Hamilton

When smudging is necessary for peaches and cherries

of gasoline from the trigger can will make the flame more persistent.

In practice it is better for one person to open the covers and another to squirt the gasoline and apply the torch. Otherwise the delay in laying down the can and torch while opening the heater would be excessive.

One of the chief deterrents from orchard-heating is the feeling that frost occurs without giving sufficient warning of its approach. However, a careful study of the conditions under which frost occurs and of the general changes of weather should enable an alert observer to determine with increasing accuracy the nights on which frost almost certainly cannot occur and those in which its occurrence is certain or highly probable.

Wind and Clouds Affect Temperature

Changes in temperature accompany changes in barometric pressure. Generally the temperature rises immediately preceding a storm and falls as the storm progresses, reaching its minimum during the period of calm weather immediately succeeding the storm.

The presence of wind or clouds will have a strong effect on raising the minimum temperature. The wind usually mixes the super-cooled air near the ground with the warmer air above, and the clouds hold in the warmth of the earth, that would otherwise be rapidly radiated into space. Only occasionally does the temperature fall during the prevalence of winds or clouds sufficiently to cause damage to the blossoms in spring. However, when the clouds and wind disappear a sudden fall in temperature regularly occurs that may destroy the entire crop. And the more violent the wind has been the greater the danger will be. Therefore it is on occasions of "clearing-up" weather that the orchardist should be especially on his guard.

In cases of "cold waves" such as are experienced particularly east of the Rockies but farther west as well, the observer need not be taken unawares. It is rare for a day of great tranquillity and high temperature to be followed by a morning of killing frost. And the higher the temperature the less the danger. In the writer's orchard the temperature has never fallen during the season of blossoms more than 36 degrees from the maximum of one day to the minimum of the next morning, and the subtracting of this number from the daily maximum has been made a rough but ready test of danger for that place.

In Nebraska the fall has been as great as 60 degrees. If the temperature is abnormally high, one should be on his guard against coming storm, which may be attended or followed by a pronounced fall in temperature. The barometer is perhaps the surest guide, for if it be rising rapidly after a period of depression the danger is high.

The time of greatest uncertainty is in periods of fair weather, when the minimum temperature closely approaches the freezing point each night and only a slight change in conditions is sufficient to cause frost. However, such frosts are usually light and occur in the bottom lands where the radiation is greatest.

How to Tell When to Expect the Low Temperature

The method of forecasting the minimum temperature by means of relative humidity or dew point observations may lead to disaster if followed too implicitly, for there is too great a variation between the minimum temperature and the dew point to determine the former by the latter. Indeed, it often happens that the minimum temperature is actually lower than the dew point.

A simple plan that will work well in case the sky is clear and calm at the time of observation, is to note the rapidity of the fall in temperature from eight o'clock to ten in the evening and determine how far the temperature could fall at this rate by the following morning. For example, if the thermometer should record 42° F. at 8 o'clock and 40° at 10 o'clock, it is evident that in the remaining seven and one-half hours until sunrise the temperature should fall not more than 7.5 degrees, making a minimum temperature of 32.5° F., or higher, if wind or clouds should appear. However, if there should be wind or clouds during the period of observation the estimate would be precarious, for if the sky should clear or the wind die down the rate of fall in the temperature would be immediately increased. To provide against possible surprises allowance should be made for a fall of two degrees or more per hour.

In connection with local observations the daily forecast of the U. S. Weather Bureau should be obtained by telephone, if possible, from the nearest Weather Bureau station.

But most essential of all is a frost alarm to awaken the orchardist when the temperature approaches the danger point. This alarm in its simplest form is a doorbell attached to an electric circuit, which is automatically closed by a special thermometer or thermostat when the temperature has reached a definite point. While the temperature stands at this point or

lower the bell will continue to ring until the circuit is broken. The deepest sleeper cannot withstand its persistent call.

In no case should the temperature be allowed to fall below the danger point. However, the temperature can be allowed to fall within one degree of it, providing the heaters heat up rapidly and can be lighted in time. After the heaters have once been lighted the only need is to keep the temperature stationary.

To determine the danger and the amount of heating necessary the thermometer should be hung in the lowest part of the orchard and should be at the height of the lower limbs above the ground. Except possibly in time of wind, this point represents the coldest portion of the branches of the trees. The thermometer should be either wholly exposed to the air or in a shelter with open bottom and sides.

To minimize the danger when the time for lighting is brief the heaters in the lowest part of the orchard should be lighted first; then, if any air is in circulation, the heaters on the windward side.

A thermometer should be hung some distance outside of the heated area to give a clue to the amount of heat required.

Economic heating must be carefully adjusted to the shifting danger point of the various blossoms. Early in the season only such fruits as apricots, peaches, pears, plums, and early apples will require heating, and these probably only to 25° F. At this time the later fruits are as yet safe in temperatures above 15° F. However, as the season advances the degree of temperature must be raised to 31° F. as the petals unfold and the fruit sets, when 30° or lower is sufficient for protection during the remainder of the season.

The following table indicates in degrees Fahrenheit the danger point of the fruits usually grown:

Fruit	In Bud	In Blossom	In Setting	At Other Times
Almonds	28°	30°	30°	28°
Apples	27	28	30	25
Apricots	30	31	31	30
Cherries	29	30	30	29
Peaches	29	30	30	28
Pears	28	29	29	28
Plums	30	31	31	29
Prunes	30	31	31	29

A better guide, however, is furnished by the accompanying graphic illustrations of the unfolding of the blossoms of the peach and the apple, with the degree of danger at each stage of development. In the main the cherry is similar to the peach in sensitiveness, and the pear to the apple. The plum is slightly more sensitive to cold than any of them.

Even if the orchard has been unavoidably struck by frost it may still be advisable to continue heating. Some trees are long bloomers, and may still bear a fair crop after the first blossoms have been destroyed. In the case of other trees only a portion of the blossoms may have been killed. If only one blossom in ten has been destroyed the crop will be in nowise impaired. If nine in ten have been killed the crop will still be fairly good in quantity, but there is always the possibility that the remaining blossoms have been injured sufficiently to dwarf the fruit. Such was the case in the writer's orchard the present season. A tree that had lost only one blossom in ten produced eight boxes of apples, while an adjacent tree that had lost nine times as many produced as high as seven boxes. However, the fruit on the tree that had lost most blossoms was undersized. From this it is evidently better not to thin the fruit by frost but by hand. Then the survival of the best fruit can be assured.

Estimating the Damage Done

In making an inventory of the damage by frost, split the blossom lengthwise in order to lay bare the seed chamber and the tube leading to it. If either of them is brown or discolored the blossom will not mature satisfactorily. In estimating the relative amount of damage, blossoms should be taken from all portions of the tree.

The instruments most desirable for forecasting and recording frost are a barograph, a thermograph, and a frost alarm. The barograph and the thermograph make a continuous trace of the rise and fall in the pressure and temperature of the air. These instruments need resetting only once a week. An aneroid barometer, the cheaper, is unsatisfactory, for it does not record, and without a record on paper to observe, it is too difficult to detect a sudden rise in pressure, which indicates the rapid approach of frost.

A maximum-minimum thermometer can be substituted for the thermograph, provided it is reset each day and the maximum and minimum temperatures are carefully recorded. Either instrument should be kept in the free air away from the house, yet sheltered from the sun. A home-made board

support will suffice. The instrument should be placed at the height of the lower limbs above the ground.

In case a maximum-minimum thermometer cannot be obtained, a standard thermometer, carefully tested for accuracy, should be used. An inaccurate thermometer may mean the loss of the crop.

If any doubt is felt regarding the accuracy of a thermometer the following simple test will determine the correction to apply near 32° F., the point of freezing:

Place the bulb of the thermometer in a slush of melting snow or pulverized ice. If the thermometer is correct it should read 32°. If it reads 31°, one degree should be added to all readings near the freezing point; if it reads 33°, one degree should be subtracted. However, this method will not indicate the error



Hamilton Reservoir Orchard Heater—(3 to 6 gallons)

of the thermometer at temperatures of 15° to 25° F.

An inexpensive frost alarm can be made from a metallic thermometer or thermostat, an electric doorbell, a battery, and sufficient bell wire to make a circuit from the open air to the watchman's bedroom.

Frost Alarms Will Pay Their Way

The only difficulty is in setting the contacts of the thermostat so as to make the bell ring at 32° F. This can be done by placing the thermostat in a bath of slush, as in the case of the thermometer, and so regulating the contacts that the bell just begins to ring. Care should be taken to keep the contacts and electric connections above the surface of the slush. To set the thermostat above 32° F. it is merely necessary to warm the bath to the desired degree; to set the thermostat below 32° it will be necessary to expose it to air possessing the requisite temperature, providing such can be found. In either case a carefully tested thermometer should be used for comparison.

The chief defect of this alarm is that the tongue of the thermostat tends to shift upward and rouse the orchardist too soon. The circuit must also be tested each evening to ascertain whether the alarm is in working order.

A mercurial alarm system, although more expensive, is not only more accurate but cannot get out of order without turning in an alarm.

The price of instruments and heaters is as follows:

Richard Barograph	\$28.00
Richard Thermograph	28.00
Draper Thermograph	20.00
Six's Maximum-Minimum Thermometer	4.50
(The writer cannot vouch for the accuracy of this instrument.)	
Standard Exposed Thermometer	2.75
Thermostat without connections	1.50
"Tyco" Frost Alarm Thermometer (mercurial), complete except wire	27.00
Cederborg Frost Alarm (mercurial) with 100 feet of wire	\$15.00 to 20.00
Hy-Lo Orchard Heater, eight-gallon, square	.85
Hamilton Reservoir Orchard Heater, six-gallon	.50
Hamilton Reservoir Orchard Heater, three-gallon	.35

Ways to Get Oil Cheaply

The price of oil must necessarily vary according to the distance from the refineries and the quantity purchased. In Nevada, tank-car lots of 12,000 to 13,000 gallons are quoted at 3.5 to 4 cents per gallon, and in drums of 110 gallons at 4.5 to 6 cents.

In Nebraska, oil in tank-car lots of 6,500 gallons has cost 2.5 cents delivered at the nearest railroad point, and 3.75 cents after being hauled four miles to the orchard in tank wagons.

Recent quotations on tank-car lots at the refineries in Missouri, Indiana, and Illinois vary from 1.67 to 3.5 cents. The price in drums would probably be from fifty to one hundred per cent. greater according to the distance from distributing centers.

Where orchardists cannot combine to purchase oil by the tank-car lot it will be possible to obtain smaller quantities in drums from the near-by cities and haul it to the orchard on the farm wagon.

In the case of small orchards the oil left from one season to the next can be stored in the heaters, or preferably in the drums. Care should be taken, however, to smear the heaters with oil and place them under shelter to [CONTINUED ON PAGE 21]

One blossom in ten was destroyed by frost, yet there is a full crop

each night and only a slight change in conditions is sufficient to cause frost. However, such frosts are usually light and occur in the bottom lands where the radiation is greatest.

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Here the orchard and tomato plot are protected by a windbreak of Lombardy poplars and willows



The purity of milk is a personal matter

The White Whirlpool

By D. S. Burch, Associate Editor

Illustrated by De Alton Valentine

6—The Consumer, Whether a Good or Poor Judge of Milk, Will Always Remain the Judge



Most milk costs less than five cents per pound

IN THE articles that have gone before we have mentioned some of the reasons for the unsettled conditions in the dairy business. The educator, dairy scientist, inspector, and lawmaker have been shown to be unreliable leaders in several important matters. The milk dealer on the other hand has pushed himself to the front to a position of control. By his thorough knowledge of his own business and the business of others associated with him he has become the most dominant figure in the commercial dairy business.

The consumer is not always a good judge of milk, but whether he judges rightly or wrongly he will always remain the final judge. This is true of all commodities. He may judge milk by the faucy cap on the bottle; or, if a cook is employed who is given the selection of milk she may prefer that it be delivered by a particular driver; or, if one dairyman will extend credit and the other insists on frequent settlements the one that extends credit may get the business. But even if the consumer sincerely wants pure high-class milk he has a hard task in making a wise selection.

He has a problem harder than the judge on the bench, for the judge has his laws to guide him. The average consumer has merely his intuition, his five senses, and the usual amount of general knowledge. He is not, therefore, greatly to blame if he decides wrongly. Fortunately his mind is open for information, and those who help him to become a better judge will be repaid for their efforts.

Manufacturers of condensed milk have told the consumer of the advantages of using their product. One ad tells him condensed milk is convenient to have on hand. Another states it is germ-free. Another says that the United States Navy uses nothing except condensed milk. Another that as it comes from the can it is as good as cream, and when diluted with an equal volume of water is as rich as ordinary milk. Still another tells him that it comes from contented cows. And all of this is true except perhaps about the contented cows. And so he gets the full story of condensed milk except the financial part of it shown in the table below, which is based on data collected by the Health Department of Boston.

Brand of Condensed Milk	Price of can in cents	Cost, in cents, of a quart of the product when a can is diluted with an equal volume of water
Challenge	10	15.8
Eagle	15	19.7
Eclipse	12	16.8
Defiance	10	16.3
Pet	10	14.8
Peerless	5	14.3
Peerless	10	11.0
Van Camp	9	10.0

These figures show briefly that the standard brands of condensed milk are considerably more expensive than ordinary milk even after diluting with water. Considering the cost of the can and the condensing process, this is but natural; but it is curious to note that the Boston consumer who absolutely refuses to pay the milk dealer more than nine cents a quart for milk pays his grocer at the rate of ten to nineteen cents for a quart when buying condensed milk.

Thus the condensed milk industry is a fine testimonial to the power of advertising as a means of educating the consumer. The manufacturers had first to overcome a deep-rooted prejudice against canned milk, then to overcome a stronger prejudice as to price.

Milk is the Most Nourishing of the Common Beverages

The food value of milk, though a hackneyed topic, is worth a moment's consideration. Though it is a liquid, milk contains more dry matter than some solids. Skeptics can surprise themselves some dull day by putting a pan of milk in the inner part of a double boiler, evaporating it, and observing the dry matter it contains. The figures that follow are interesting too from a food basis:

Foods	Per Cent. Dry Matter	Units of Energy
Milk	12.5	310
Mushrooms	11.9	185
Oysters	11.7	225
Spinach	7.7	95
Tomatoes	5.7	100

Notice that milk contains more food solids and units of energy than any article in the list. Milk also is more nourishing than tea, coffee, or the common soups as ordinarily made.

A quart of milk weighs about 2.1 pounds, which makes milk almost always cost less than five cents a pound, the cheapest of all common foods except flour and grain products, cheap cuts of meats, and starchy vegetables such as potatoes. All these products require

preparation and cooking, which adds to all their original cost and should be considered in comparing foods.

"Yes," says the consumer, "I've been told that before, and I'll admit it's true, but how am I to know when paying for milk that I am not paying for a lot of needless expense in the cost of producing and delivering? I am willing to allow the producer and dealer a fair profit, but I will not pay for wasteful and needless expense. Also," the consumer adds, "tell me, when all grades of milk look alike and taste alike how can I tell good milk from bad, and why do different dealers ask different prices?"

These are questions the consumer has a right to ask, and we must be posted to answer him. I asked a dairyman near Memphis, Tennessee, what it cost him to produce a quart of milk. "Search me," was the answer. "It would take a Philadelphia lawyer a year to figure that out. Besides I cannot afford to keep books."

I asked the same question of another farmer selling milk from a twenty-cow herd in Virginia, and he produced figures showing that the average yield of his cows was 6,132 pounds a year, and that he made .48 cent profit on each quart. The retail price was eight cents. Delivery and production cost him 7.52 cents.

Just for a moment think how much better off this man would have been if he had had better cows. His

high cost of producing milk will show that the farm is poorly adapted to the milk business and would be better for some other purpose.

A young farmer about six miles from Mankato, Kansas, whom I visited, had contemplated selling both milk and cream in Mankato, but found he could more profitably sell first-class dairy butter and buttermilk. While the butter brought a smaller gross income than would have been received from milk and cream, the gross cost of delivery was much less because of less frequent trips, and his net profits justified his wise decision.

Simple Rules for Selecting Milk

The method for selecting the best grade of milk from the kinds available is a question which the consumer must help himself to answer. The best general rule is to observe the keeping quality of the milk. If kept in a clean place at a temperature of 60° F. or less, good milk will remain sweet twenty-four hours after delivery.

With this general idea in mind, first consider the case of the consumer who deals directly with the producer. A personal visit to the dairy is enlightening, but is seldom indulged in. People are too busy, and, as one housewife told me, "I hate to meddle in the affairs of people I don't know very well." The best substitute for a visit to the dairy is to see whether the milkman is personally clean and particular. Does he wipe his feet on the mat, does he keep his hair brushed and are his teeth clean? Is his horse well groomed and well fed? If he seems to pass muster in these things and the milk keeps well, you are fairly safe in patronizing him. If he Pasteurizes his milk you are doubly safe. The production of clean milk is a matter of personal habits rather than of fine equipment. I would rather patronize a man whom I knew to be honest and clean personally and who did his own milking and delivering than to buy milk from a careless milkman even though he had a barn of pure gold lined with porcelain.

With regard to the amount of cream on milk, remember that all the cream does not rise. Only the largest fat globules come to the top. The surest means of knowing whether the milk has been watered or skimmed is to have a chemist test it. But if the cream that rises in twelve hours on a quart of milk in the usual style of bottle is at least three inches, and in a pint bottle one and three-fourths inches, you are probably getting all the cream the cow put there.

If the consumer is getting milk from a milk company, as is customary in large cities, the source of supply is nearly always a large area instead of one farm. In such a case the first thing to ascertain is whether the milk is Pasteurized, and how. If not Pasteurized, let it alone (unless certified). If it is Pasteurized, phone the plant and ask them the Pasteurizing temperature and the time held at that temperature. Then phone the milk inspector and ask him to verify the report of the milk company. The Pasteurizing temperature should be between 140° and 155° F. At 140° the time should be at least twenty minutes. For every degree over 140° the time may be one minute less. The limits for proper Pasteurization are therefore between 140° for twenty minutes and 155° for five minutes.

The consumer is nearly always interested in anything that has to do with his physical and financial welfare. The more we can help him to be a judge of good milk and food products, the more willing he will be to listen to reason when he is asked to pay a little more for it.

Consider the Milk Philanthropist

The milk philanthropist is a partner in the dairy business who is often overlooked. He has none of the aggressive spirit of the scientist or dealer, and is quite content to be let alone. But when he gives away milk or sells it at less than cost, he is setting an example which if followed by other members of the firm Milk Producer & Co. would quickly ruin the business.

We have two kinds of philanthropists. One is the producer who has a cow or two in town and either gives away or sells for a trifling amount all his surplus milk. He keeps his cows for his own use anyway, and the surplus, when the cows are fresh, would otherwise be wasted. To attempt to market the surplus at a profit would usually involve more expense than the returns would justify. Sometimes he ships a few quarts a day by rail to a distant milk dealer. By so doing he adds to the milk dealer's surplus, thus keeping the prices down for the dairymen who are in the business for a living. His milk sales are so small that he is indifferent to organization for better prices.

About the only way that dairymen who depend upon their cows for their living can protect their interests against the one-and-two-cow dairyman is through close organization [CONTINUED ON PAGE 10]



MILK as a food contains more units of energy than many foods popularly supposed to be "strength-giving." The sketch shows that eight cents invested in a quart of milk will purchase one thousand units of energy, whereas forty cents invested in a quart of oysters will purchase only one hundred and sixty units of energy. The amount of energy-giving nourishment possessed by other foods in proportion to their cost is shown on the scale. In the class in which it is here shown, milk excels all the other foods in strength-giving nourishment

cows give only 6,132 pounds each per year. Ten thousand pounds is not a high yield for good cows. To be sure, this man sold his milk for less than five cents a pound, which is too cheap considering its food value; but if his cows had been really efficient he could have made a good profit at eight cents a quart.

There were other records showing the returns from different cows, and the cost of milking, caring for, and feeding them.

I give these figures, not as models, for they are far from that, but merely to show what one man did without the help of a Philadelphia lawyer. The cost of running a dairy is bound to change continually. It will be different for different farms and farmers. The man who has a small farm near town has a low delivery cost and a high cost for feed. The reverse is true of a larger farm farther out. If the dairy is too small, overcapitalized, or too far from the market, the

In brief, the consumer should be helped to know more about milk in order to fully appreciate its value as a food. Milk philanthropy deserves to be encouraged. More can be said in favor of than against city men's dairy farms that are sometimes conducted at a loss



Drawn Expressly for Montgomery Ward & Company by Orosin Lowell

Bobby's First Long Pants

It's a big day for Bobby—For now his first long pants have become a reality.

With a spirit of pleasurable anticipation he has awaited this package—this particular shipment from Montgomery Ward & Company. For Bobby is of a Ward family. A family that traded with Montgomery Ward & Company four decades ago.

And it was just as much of an epoch-making day for Bobby's father when he received *his* first shipment from the house whose purpose is to *serve its patrons*, fairly and squarely.

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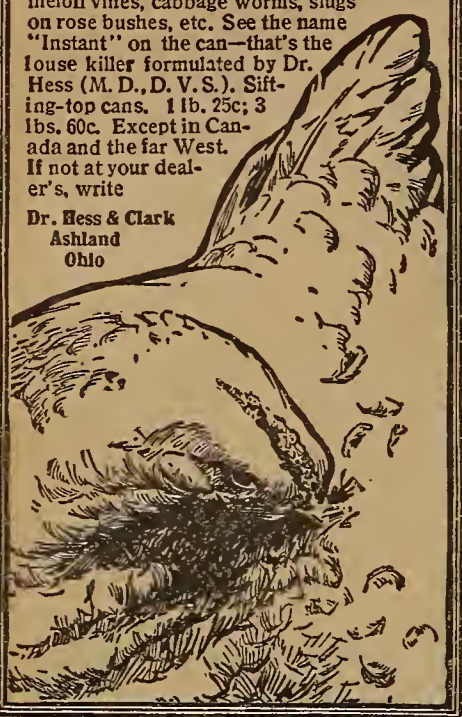
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**Kills Lice on Poultry
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It kills them *Instantly*—as soon as it gets to them—that's why it's called *Instant*. It also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. See the name "Instant" on the can—that's the louse killer formulated by Dr. Hess (M. D., D. V. S.). Sifting-top cans, 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West. If not at your dealer's, write

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**150 Incubator \$8.50
and 150 Chick
BROODER—only**

Most astonishing offer. Incubator has best equipment—comes all ready to use (not knocked down), guaranteed to please or money returned. Incubator alone \$6.00—Metal Brooder \$3.00. Both only \$8.50. Think of it! Why pay more?

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Get full details—save money—make big profits. Low buying prices and enormous production make this offer. Don't miss it. Write—Address

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Box 31, Rockford, Ill.

**YOUR HENS
YOUR FARM
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Let me tell you why the "RELIABLE" is the SAFEST buy and SURE T hatch. No better at any price. Money back, if not satisfied with Reliable Incubators and Brooders. Write tonight for catalog.

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At last—the most perfect and profitable incubator for farm use. The first practical, all metal, fireproof, everlasting machine ever produced. The first machine of its type with perfect heating and heat distributing system. The first incubator ever produced which enables the farmer to get higher percentage hatches.

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Round Like a Nest. Regulation of heat, ventilation and moisture, all automatic. Wonderful Sheer Water Thermostat. Regulator automatically turns lamp flame up and down to meet temperature in egg chamber. Overheating impossible. Uses less oil than any other incubator on earth per dozen eggs hatched.

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Poultry-Raising

Hot Air vs. Hot Water

A STRIKING example of the perfection of modern incubators is shown by the experience of an amateur in the poultry business, in the family of Mrs. Margaret Stratham of Missouri. Her sister, having a mild attack of "chickenitis," purchased a second-hand fifty-egg incubator for \$1.50, with no directions accompanying it for its operation.

Without loss of time she loaded her new possession with hot water as well as eggs but soon became apprehensive that all was not going well with her henless hatch. The telephone soon brought her the information that hot air instead of hot water was the incubative power needed. The water was removed from the heating chamber and the machine was restored to its normal condition and again got under way. The result was a hatch of thirty-six chicks from the fifty eggs. All of this hatch (except one that was drowned) grew to henhood.

Co-operative Marketing in Tennessee

By F. Roger Miller

Mr. Miller is secretary of the Farmers' Co-operative and Educational Club of Hamblen County, Tennessee, and writes from intimate acquaintance with southern marketing problems.—THE EDITOR.

EARLY in our investigation of agricultural conditions in Hamblen and adjoining counties in Tennessee, preparatory to outlining our first year's work, we found that the demand for commercial poultry was far in excess of the local supply and that our local dealers were buying in large quantities from Kentucky, Virginia and North Carolina to meet the requirements of their regular trade.

A little investigation among the farmers disclosed the fact that very few were using modern methods of poultry-raising; that practically none except poultrymen were equipped to raise chickens on an extensive scale; that the farmers generally were doing nothing to meet the rapidly increasing demand for poultry and eggs at continually increasing prices.

Morristown's annual shipments of poultry and eggs to the commercial markets north, east and south have increased in value from \$28,000 in 1902 to \$2,000,000 in 1911. And here the limit seems to have been reached. The production this year will not much exceed the mark made in 1911, and this in spite of the fact that the demand is considerably greater.

Our Outlet Was Guaranteed

We decided that, in order to induce the farmers to buy the proper equipment and adopt modern methods of poultry-raising, we must secure a market and guaranteed price sufficient to focus their attention upon the opportunities afforded by existing conditions.

Selecting the early-spring broiler because of its attractive price and the convenient season for production, we secured from a local packing-house, after explaining our plans, an agreement to pay thirty cents per pound for broilers delivered between February 1 and May 1, 1913, and a guarantee to handle 200,000 during that period. This price is from six to fifteen cents better than has been offered in former years, and no particular effort has ever been made before to secure broilers at this season because of the fact that farmers generally were lacking in the necessary equipment, and local packers had no special inducement to offer individual producers.

The average farmer in this section can probably raise broilers at an average cost of twenty cents per head, including the expense of installing incubators and brooders. The average farmer is prepared to raise at least a thousand during that period, for which he will receive an average of forty cents each, or \$400; at least \$200 of which is clear profit on not over three months' work. Many are prepared and have arranged to raise two to three thousand on their farms this season.

Contracts for 200,000 Broilers

As soon as this arrangement was completed we sent circular letters to farmers throughout the county, explaining in detail the opportunity we had secured for them, giving estimates on the cost of various equipments, suggestions as to the best methods for producing broilers, and urging all who were interested to close contracts at once and prepare for the winter's work. We called their attention to the fact that the local poultry supply had fallen far below the demand, gave them some interesting figures on the growth and future possibilities of the business and demonstrated to the satisfaction of the majority that they were neglecting one of the most profitable departments of business farming.

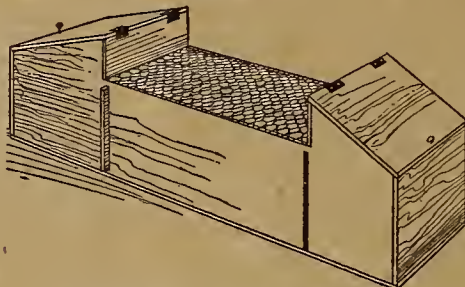
This special effort on our part, made possible by the fact that we are organized, resulted in the distribution of contracts for 200,000 early spring broilers. We have secured a new market, added a new department to the poultry industry of this section, induced about two hundred farmers to adopt modern methods of poultry-raising and to install modern equipment, and have increased the agricultural revenue of the county by at least \$80,000.

Certainly this one example of the many should be sufficient to convince the most skeptical of the value of a county organization which has for its chief purpose the improvement of agricultural conditions from the business viewpoint.

Two-Hen Hatching Coop

By R. O. Beitel

I FIND a hatching box made on the principle of the sketch here shown is a convenient contrivance and suits my purpose completely. I set two hens at one



The hens are protected, yet at liberty

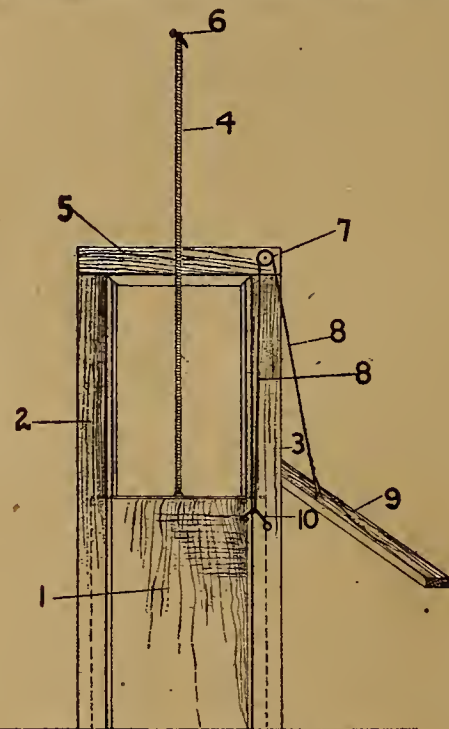
time, one at each end. I confine one on the nest for one day by a movable board. Next day I change this board to the other end.

I keep feed and water in all the time, and cover the bottom with fine coal ashes so they can eat, drink, or powder themselves at will. This hatching box is 7 feet long, 2 feet wide, and 12 inches high. At both ends I have an inclined lid, hinged and covered with a good grade of roofing paper to keep the hens dry. The space between these end parts is covered with chicken netting, so the hen is quite secluded and cannot be interfered with by other chickens, yet has liberty to exercise and feed at will.

The Daylight Door Opener

By O. T. Fouche

ALL during the summer this device which is sketched here saves me a lot of extra trouble. The hens are out by daylight, and they get out by their own efforts. The device requires no attention until evening, when the chicks are closed in again from



The trick is a simple one

the prowling animals. With slight readjustment this device will work as well for small chicks as for the hens.

The birds jump on the stick early in the morning. Their weight releases the hook and elevates the door and the door remains open all day unless closed by the attendant.

The method of working this device is as follows: Place a few grains on the stick (9) when closing the door. Have the stick sufficiently above the floor, not too high, however, but so that the hens can jump on the same. It is their weight, of course, which releases the hook (10).

Adjust the stick higher when the hens have grown to a size where they can pick off the grains without jumping up.

The following explanation will give the details of construction:

1, Door; 2-3, Runways (grooved); 4, Spring (best), or heavy rubber cord, or rope (pulley and weight); 5, Stop for door; 6, Nail, or pulley if counterweight is used; 7, Spool, pulley or nail; 8, Heavy cord (with extra length to allow for adjustment of 9 for small chicks); 9, Common board hinged to convenient point to allow stick to swing up and down slightly; 10, common hook and nail.

Over \$60 per Acre

By William Madison

WHEN we first began to raise poultry we were renters, so we did not raise as many as we wanted to. Our flock was then composed of various breeds, but a year ago last spring we bought a small farm of six acres and started into business for ourselves on our own farm, even though it was small.

The first summer we built a henhouse 16x32 feet. We selected the best of our Barred Plymouth Rocks and bought two good males and some pure-bred Rhode Island Red eggs and raised over four hundred birds from these. We kept one hundred and fifty pullets and sold all of our old flock. One hundred and forty of them began to lay in December, ten of them were hatched late in the summer, and so did not lay until spring. We kept account of what they did for a year beginning the first of January. This is our record:

	Eggs		Eggs
January	1,429	August	1,872
February	1,290	September ..	1,584
March	1,818	October	1,285
April	2,563	November ...	813
May	2,468	December ...	625
June	2,133		
July	2,007	Total	19,887

We sold 1,512 dozen eggs, which brought \$388.23. We set and used 1,643 eggs, giving an average of 132 eggs per hen.

This year we built another henhouse 14x24 feet and have three hundred hens and pullets. Last fall we did not keep an account of the chickens we sold.

We use a hopper to feed a dry mash which they have at all times, with wheat and oats in deep litter in the morning and corn at night. Some kind of green feed, such as beets, cabbage, or alfalfa meal, is supplied. Oyster shells and charcoal are placed where they can have it whenever they want it, and they have all the fresh water they want to drink.

We have no floor in the henhouses, as we use them for a scratch pen and like the ground the best.

The High Cost of Gravel

A NEW side light on the high cost of live poultry has been brought to notice in New York City. Live chickens that are ravenously hungry after reaching the railroad yards are fed a paste made of gravel, sand, and ground rock, using a little sticky flour for a binder. The famished birds will greedily cram their craws with as much as a half pound of this rock ballast, which being indigestible remains in the birds' digestive tracts for days until the consumers' hands are reached. In a five-pound chicken the gravel adds about ten per cent. to the consumers' price.

In a year the ten million pounds of sand and gravel thus fed to the live chickens in New York City are paid for at retail prices aggregating about one and one-half million dollars. The buyers of this rock-fed live poultry are mostly Jews and the poorer classes of New York City people.

The Blue Bird

By Edgar S. Jones

IT HAS often been said that one of the first indications of spring in central United States is the appearance of the blue bird. He often arrives in his northern range even before the snow has gone. His range extends from the northern line of the United States to the Gulf of Mexico. This bird is easily recognized by his coloring. The upper parts and wings are of a bright blue, while the breast is of a brownish red and the underpart of the body a white.

Our admiration for the blue bird is not caused so much by his brilliant colored suit and his song, as it is by his destruction of insects and his general conduct. He will seldom engage in a quarrel, unless there is immediate danger that the mate or nest will be disturbed. His food consists of bugs, grasshoppers, caterpillars, ants, and wild fruit, such as the hackberry and holly.

Upon the arrival of autumn one may see a pair of old blue birds accompanied by twelve or fifteen young birds. Their fall song does not have the melody and the spirit of the early spring selections. They seem to feel the chilliness of the fall, and long for the brightness of the springtime.

Kafir for Poultry

By A. C. Hartenbower

THE rise of Kafir to a place among the staple crops of the Southwest makes it a formidable competitor of corn and wheat in forming rations for all classes of poultry. Because it has proved its value as a poultry feed, this grain sorghum has attained wide popularity among poultry-feeders. Those who know it best and have used it most are strongest in its praises.

The Oklahoma Experiment Station during the winter 1911-12 studied the relative efficiency of mixed rations of Kafir, Indian corn, beef scrap, and cotton-seed meal in feeding fattening poultry. The results of the experiment conclusively proved the value of Kafir when compared with Indian corn in feeding fattening chickens.

WANTED TO KNOW

The Truth About Grape-Nuts Food.

It doesn't matter so much what you hear about a thing, it's what you know that counts. And correct knowledge is most likely to come from personal experience.

"About a year ago," writes a N. Y. man, "I was bothered by indigestion, especially during the forenoon. I tried several remedies without any permanent improvement.

"My breakfast usually consisted of oatmeal, steak or chops, bread, coffee and some fruit.

"Hearing so much about Grape-Nuts, I concluded to give it a trial and find out if all I had heard of it was true.

"So I began with Grape-Nuts and cream, soft boiled eggs, toast, a cup of Postum and some fruit. Before the end of the first week I was rid of the acidity of the stomach and felt much relieved.

"By the end of the second week all traces of indigestion had disappeared and I was in first rate health once more. Before beginning this course of diet, I never had any appetite for lunch, but now I can enjoy the meal at noon time."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

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It's not a question of work or no work, but of keeping dry while you work. The coat that keeps out all the rain is



REFLEX SLICKER

No water can reach you even through the openings between the buttons. Our famous Reflex Edges keep out every drop. Make the Reflex Slicker your wet weather service coat. It's the best you money can buy.

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If this drill does not satisfy you in every way after 30 DAYS' FREE TRIAL back at our expense and we will refund all your money, or forfeit \$10,000.00 held in trust by our bankers to protect you. This is the best all-around drill on the market—does all kinds of work, grain or fertilizer. Strong, durable, exact. High broad tires lighten pull. We also make a low down and plain seed drill. We sell direct from factory—save you \$10 to \$20 dealers' profits. HERTZLER & ZOOK CO., Box 116, BELLEVILLE, PA.

112-PAGE POULTRY BOOK FREE

If you are thinking of buying an incubator or brooder you should send for our big 1914 catalog at once. Describe many new, exclusive improvements in this year's PRAIRIE STATE Incubators and Brooders. Also contains about 60 pages of valuable poultry information—how to feed, rear and breed; treat disease, poultry buildings, home grown winter feed, etc. Just out—a postal brings it FREE. Write today—now. (1) Prairie State Incubator Co., 109 Main St., Homer City, Pa.

LITTLE GEM HATCHERIES

AND BROODERS cost only 40c. each. Over 225,000 now in use. This lady hatched and raised 1,712 chicks in them last year. Send Stamp for Catalog. F. GRUNDY, Poultry Expert, Morrisonville, Illinois.

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It is well to note that the value of Kafir as a feed for breeding poultry ranks higher when compared with corn than when it is used in a fattening ration. When fed in the head, in particular, it has been found of especial value for feeding to breeding poultry.

In feeding Kafir to fattening poultry it has been found by experienced feeders, as has been found by feeders of corn, that the maximum results are obtained when this grain is fed in conjunction with some nitrogenous feed such as beef scraps or cotton-seed meal. For the breeding flocks of poultry, reports go strongly to show the desirability of leaving the grain in the head, since the birds obtain necessary exercise in picking out the kernels. If threshed grain must be fed it should be scattered in straw or some other litter, so that the fowls may obtain exercise.

Experienced users of Kafir grain in poultry-feeding prefer it greatly to corn, and some even make the assertion that it ranks alongside wheat for this purpose. At the price of Kafir on the market, a comparison of wheat with Kafir, or corn with Kafir, shows Kafir to be a cheap feed.

The following rations, which contain Kafir as a basic part, are recommended by the Oklahoma Agricultural Experiment Station:

For Fattening Poultry—Kafir chop, 3 pounds; mill run, 1½ pounds; beef scraps, 1 pound; buttermilk, 13¼ pounds.

For Breeding Poultry—Grain Feed—Equal parts of Kafir grain and wheat or cracked cowpeas or cracked peanuts.

Ground Feed—Ground Kafir, 7 pounds; ground wheat, or peanuts, or cowpeas, 7 pounds; alfalfa leaves, 2 or 3 pounds.

The above rations are based entirely upon the proportion required and not upon the amount for each fowl. It is noted that the fowls are allowed all the feed they will consume.

For Commercial Egg Production—Whole Grain Feed—Kafir, 2 pounds; wheat, 2 pounds; oats, 1 pound. To be fed in litter, morning and night.

Along with the whole grain ration keep in a feed hopper before fowls a dry mash of:

Mill run, 3 pounds; Kafir chop, 2 pounds; ground oats, if possible, 2 pounds; beef scraps, 1 pound. To every 100 pounds of the mixture add 5 pounds of charcoal and 1 pound of salt.

In case hens are getting too fat for egg production close hopper in evening and leave shut until following noon.

Load with Coarse Salt

SHALL we take a shot at the poultry sneak thief, or let him fill his sack with our plump pullets unmolested? This matter is more than ever serious as the prices of meat and eggs continue to soar.

Here are the views of William R. Towse, suburban poultry-keeper of Ohio:

What shall we do with the chicken thief? He is one cause for the high price of eggs, as we have to go to extra expense for the defense of our chickens. If we don't we are liable to wake up some morning with a loss of fifty or a hundred chickens, and the worst of it is, if we should hear the thieves and go after them to protect our own property we are liable to get shot or killed. We are almost afraid to shoot at them for fear of killing them, and if we should the chances are that a good citizen protecting his own property would be sent to the penitentiary or electric chair, and the thief get off with a light sentence if he was not killed. I think it is all dead wrong.

Of course the last thing a good citizen wants to do is to kill anyone. But if he should in the case I refer to he ought to go free and the thief should be wholly (and the only one) responsible, if he should get killed, for taking the chance of death in his own hands.

Chicken thieving has too long been treated as a joke or as an offense to be winked at by everybody except the loser of the fowls. At the present time the loss of specially bred chickens represents dollars where dimes were formerly involved. To help discourage chicken thieves our courts must change front and make the penalties fit the new poultry conditions.

The courts need an auxiliary, however, in the form of a special purpose gun in the hands of every poultry-keeper. A gun that can be loaded with salt, pea beans, or similar non-killing substances. Cartridges filled with a heavy charge of this character will punish and mark marauders found about the chicken premises without danger of taking life. Poultrymen in every neighborhood should co-operate in this.

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Adapted to any type of building—in any climate. Easily applied. J-M Roofing Cleats, packed in each roll, make absolutely watertight seams and give the entire roof a handsome white appearance.

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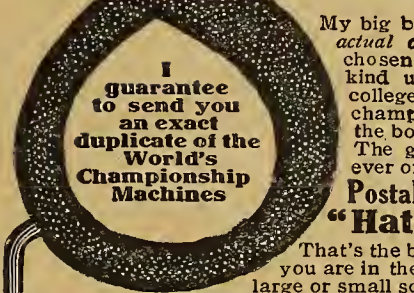
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That's the book you want, whether you are in the poultry business on a large or small scale. "Hatching Facts" has information for every member of the family. Tells you how to make big money—gives you my personal money-back guarantee. Just write, "Send me Hatching Facts," and my whole interesting proposition will come to you free. Jim Rohan, Pres.

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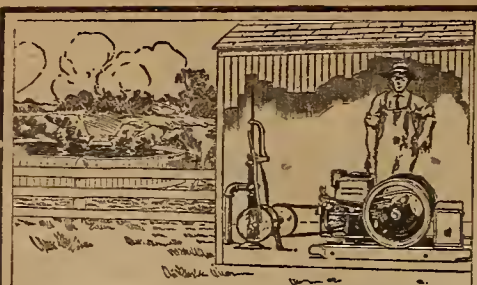
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Selling Eggs to Grocers

By May Ellis

ONE may ship eggs direct to a commission merchant, several neighbors uniting, if necessary, in order to send at frequent intervals, but it is difficult to secure an honest merchant. The commission business seems to offer peculiar attractions to the dishonest dealer. Besides, the commission, of course, has to be deducted. Some of my neighbors sell their eggs in this way, but from the frequency with which they change from one dealer and one city to another would indicate that the results are not wholly satisfactory.

There remains the alternative of selling to grocers in the large cities, thus eliminating all but one of the middlemen between seller and consumer. This has been my own method, and it seems to me better than the others. Soon after going into the business I obtained from a neighbor the address of a large grocery firm which shipped eggs. I began sending eggs there. Sometimes the price was much better than I could have obtained nearer home. Usually it was somewhat better. Occasionally I could have received a trifle more (express being considered) from some egg-buyer; but I never shifted back and forth, I sent steadily and regularly to the one place.

After a while the firm united with another, but this only caused a change of address. Then, after a time, one of the original firm went into business for himself and desired that I ship to him. Our dealings continued until I stopped keeping poultry.

Taking up the business again after several years, I wrote to both firms where I had shipped eggs. One had only one store instead of several, and was already supplied; the other had gone into another line of business, but kindly furnished names of other grocers with whom I might deal. One of these offered to try my eggs, and has ever since been taking them at a fair price.

There are some things for the seller to consider in order to hold a good market when he finds one. Shut up the sitters promptly before they half spoil the eggs; gather twice a day in hot weather; have the eggs clean, and ship as often as possible. Stick by your buyer, and send regularly until he learns that he may depend on you and feels that you are honest and reliable.

Coop for Hens and Chicks

By A. E. Vandervort

THE hen which is expected to raise a large brood of chicks should be provided with good quarters. The coop should admit plenty of sunshine and should be wind, water, and vermin proof. It should afford



Fig. 1

easy access to all parts for cleaning. The coop should not be cumbersome or elaborate, yet it is advisable to build substantially.

The box-shaped coop shown in Fig. 1 is well adapted to the needs of the man who has only a few broods to raise in the back yard during the spring, or of the farmer who raises a large number of chicks with hens. This coop is built on the colony-type plan. It is 36 inches long, 18 inches wide, 18 inches high in the rear, and 24 inches in front. It is divided into two compartments, making each compartment 18 inches square. Using these dimensions, even lengths of lumber may be used with little waste. The two side walls and back are made tight-fitting, and it is well to cover them with roofing paper if tongue and grooved siding is not used. The roof should be of light pine lumber covered with a good roofing paper. Shingles are not adapted to this coop, nor to any coop or poultry house, for that matter, as they require too steep an angle, thus requiring additional lumber, and they also harbor lice. All poultry-house roofs should be as flat as possible, to hold the warmth down next to the fowls during the winter. The same principle applies to cooping a hen and chicks.

The compartment in which the hen is confined is to the left, and is divided from the one to the right by slats. The dotted lines represent the door, which is hinged at the bottom in front of this compartment and acts as a platform in front of the coop during the day and at night as a tight-fitting door, excluding rain, wind, and rats. One or more slats in front should be made loose-fitting, so the hen may be released.

The compartment to right, or the sun parlor, is fronted with a door covered with half-inch wire netting, which excludes cats and weasels. A little trap door (partly open in the illustration) is made directly above the wire door. Through this the feed and water is given to the chicks early in the morning, before the dew is off the grass and while they should yet be confined.

The little fellows cannot slip past your hand when fed through this door. In the

sun parlor the chicks can be fed the small chicks' feed and delicate morsels too expensive to fill the old hen's crop with. The little chicks can feed here early in the morning, on rainy days and when it is too cold to let them out, unmolested. The hen is fed whole corn at the same time, and cannot trample or bother the chicks. When the dew is off the grass, and the chicks are old enough to be given the run, the door platform in front of the hen's compartment is dropped to the ground and chicks can get out into the open directly from the mother hen's compartment while the hen is confined. For convenience the floor may be made to drop out and the roof hinged.

Fig. 2 shows a coop for hen and chicks, and is a modification of the old-fashioned A coops. The framework in front is covered with one-inch wire netting, and in this part the chicks may be fed apart from the hen, and given a grassy plot.

A loose-fitting floor is placed in the rear, where the hen is kept. This coop may be

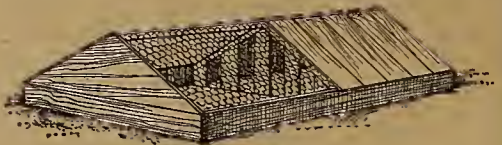


Fig. 2

moved about over the grass frequently, where the chicks cannot be given free range. A trap door should be made at the back to get at the hen easily. A storm and sun shade may be made of three or four boards nailed together and leaned against the wire part on whichever side the sunshine or rain is coming from. It should be made to extend up above the coop 18 inches. This coop is made wider and not so high as the old-fashioned A-shaped coop. This gives the hen more room and makes it more cozy by holding down the warmth.

The White Whirlpool

[CONTINUED FROM PAGE 6]

and through contracts guaranteeing year-around service.

The other type of philanthropist is the man who sells, for less than cost, the finer grades of milk produced in expensively equipped dairies. For example, in Memphis, Tennessee, the death rate of children under one year of age was at one time so high as to attract the attention of a public-spirited citizen who built a splendid dairy barn and equipped it with every sanitary device needed. Better still, he employed a careful and competent man to manage the dairy for him. The business is conducted on a philanthropic rather than a commercial basis.

Why the Babies Were Bottle-Fed

In Washington, D. C., one large milk plant distributed over 375,000 bottles of milk for baby feeding, in the course of eighteen months, at a price mostly under cost. The average number of persons in the families helped was about five, and the income per family only 97 cents a day. Over a fourth of the babies had to be bottle-fed for the sole reason that the mothers were obliged to go out to work. So the dairy supplied them with milk at less than cost. Right or wrong? Consider how the little tots would have suffered from improper feeding, and consider the grief of the parents over the death which would have claimed many, and you will believe with me that to sell milk at less than cost is sometimes a noble kind of philanthropy. But how much better it would be to save the mothers from the necessity of going out to work, and thus enable them to nurse their babies! Cow's milk at its best is a poor substitute for mother's milk.

So before we criticize rich men's dairy farms we must first consider their service to humanity and remember there are two sides to the question of selling milk below cost.

Don't Oppose the Philanthropy

Any apparent injury done the commercial side of the business through philanthropy is more than offset by the advertising of the milk business gained thereby. Philanthropy is the expression of consideration for your fellow men, and is natural to everybody. It is one of the little extras in the social side of life, and that is why it must not be expected in business. No dairyman can be expected for the sake of charity to make a business of selling milk under cost or at any figure which does not give a reasonable profit above necessary expenses.

That kind of false philanthropy would ruin his own home and increase rather than diminish the dependents that society must care for. So philanthropy must take care of itself. It will always do good. It is like a benevolent stranger: it is something not to be counted on or expected, and no dairy farmer ought to feel badly because he cannot be a philanthropist. But in the name of humanity let those who can afford to be philanthropists keep up their good work. Do not hinder them.

If you will not help save the babies for the sake of the babies themselves, remember that every live baby is a milk consumer, and always will be. And the partner that helps to increase the number of customers helps the business. [TO BE CONTINUED]

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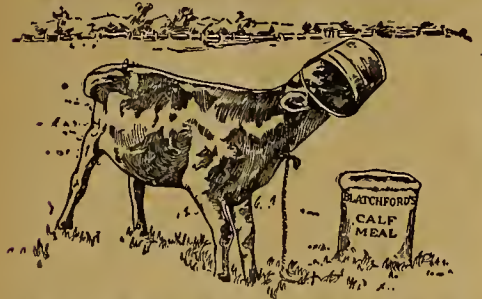
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Live Stock and Dairy

Will Hogs Stop Rooting?

By L. K. Brown



THE hog in his natural wild state got much of his food, consisting of grubs, insects, roots, and mineral matter, by rooting. For this purpose nature equipped him with a long nose, a sensitive and flexible snout, and a thick, heavy layer of muscles over

the sides and top of the neck. There still remains in the improved and domesticated hogs of to-day much of this natural instinct to root.

In the rooting much sod is destroyed, especially if the sod is of the dense shallow sort, such as that of blue grass. If the hogs are pastured in alfalfa or clover lots, where the surplus is cut for hay, the mounds thrown up cause trouble in mowing. During the hot weather the hogs will wallow in the wetter parts of a field and cause damage of similar nature.

Give Them Plenty of Mineral Matter

If the pastures are to remain unscarred, sometimes heroic methods must be resorted to, but for the most part the rooting can be controlled by simple means. First of all there should be sufficient protein in the feed to balance the corn. If the hogs are on alfalfa or clover pastures this is furnished in abundance.

Next provide plenty of mineral matter in the form of salt, ashes, charcoal, and slaked lime. A simple way to handle this is to select a bare spot near the feeding troughs where rooting will do no damage. Then make a heap of the minerals to be used, and pour a large quantity of water over it. The salt and the lye from the ashes will saturate the top layers of the soil and the hogs will use their rooting energies here, eating this mixture and leave the pasture alone. The next supply of minerals should be dumped in the hole that has been started, and more water added if the ground is not already wet.

Provide shade for the hogs in hot weather. By pouring water in selected shaded places you can make the hogs wallow in the mire where it will do very little or no damage.

The Best Way to Ring a Hog

Should an occasional hog persist in being destructive, make a diagonal slit in the cartilage of the nose. This will usually suffice. If not, rings must be used. The best way to ring a hog is also the easiest



A new supply of mineral matter always attracts the hogs

and simplest. Procure a strong rope of medium size and make a noose in one end. The hogs to be ringed are driven into a tight pen with enough others to make the enclosure full. Old sows that have been ringed before become expert in dodging if there are not enough hogs in the pen to prevent. Of course they will drive into a place they are accustomed to easier than into a strange place built for the occasion. The noose of the rope is put around the upper jaw and slipped back behind the tusks to prevent it from slipping off. The hog is then snubbed around a strong post. He will pull back and the ringer can step up and insert his ring quickly. The ring should be set moderately deep, not deep enough to bind the muscles inside of it, nor shallow enough to be easily pulled out.

How to Ring and How Not to Ring

Rings and ringing pieces are usually in the stock of every hardware store. The ring should be placed a little to one side of the middle of the nose, and, in some cases, another on the opposite side will be necessary. Smooth single rings should be used and the joint should never be in the flesh as this causes constant irritation.

The simple rope method is more practical than a special ringing chute. Too much time is wasted in driving the hogs into the chute and adjusting it to the size of each individual. Either method requires two or three strong active men.

The practice of ringing should be avoided



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POSTUM

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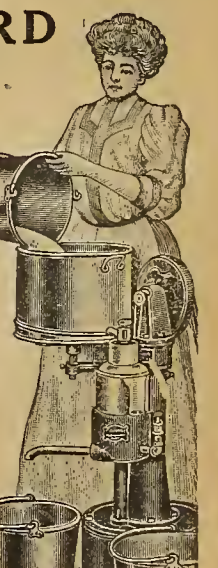
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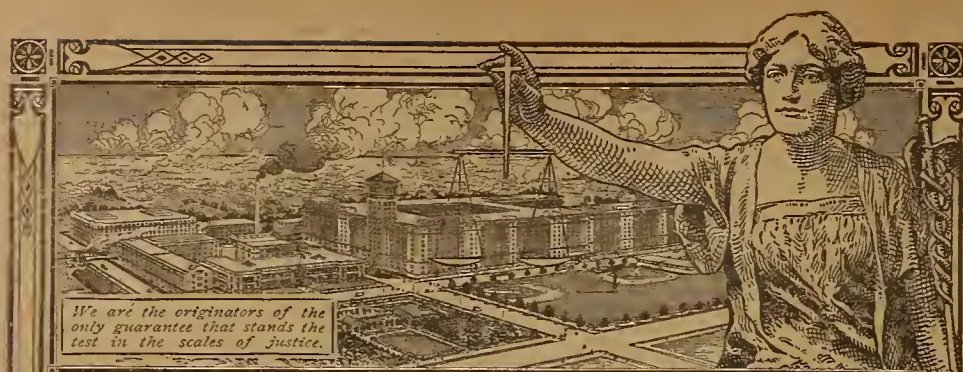
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as much as possible. Successful hog-raisers use rings but little. I have observed no difference between the different breeds in regard to their desire to root, though for eight years I raised large, heavy-set Poland Chinas and now have Yorkshires—a breed noted for their race-track performances and their stump-lifting ability.

The rooting question resolves itself into this: After proper preventives are used which keep most of the hogs from doing any material damage, will those hogs that still persist in rooting do as much damage as is the injury to their growth caused by the constant annoyance of rings in the nose? This is a question each man must answer for himself, for he alone is familiar with his own particular conditions.

Rasp the Hoof

By H. F. Grinstead

THE natural growth of the hoof should be uniform at all points, thus producing a perfect hoof. There are various causes, however, for the hoof to grow in an unnatural manner, causing crooked feet and in some instances inflicting permanent injury.

While running on pasture the wear will be even, and trimming will not be necessary; but when the colt has been stabled, standing a good part of the time in the damp stall, the hoof should be examined every four weeks and rasped off even, removing the sharp corners that usually appear at the heels. The edge of the hoof should be rounded off to prevent breaking, and plenty of straw provided for the animal to stand on.

With the draft horses the hoof is likely to grow longer on the outside, especially of the hind foot. Enough of this should be removed to throw the center of the hoof in line with the center of the leg, as nature indicates is necessary for good "action."



Likely Jack Sprat could eat no fat because he didn't feed his hogs a fattening ration.

Mare That's Afraid to Back

By David Buffum

A READER writes me from Pennsylvania concerning his mare which is afraid to back out of the barn. The first time an attempt was made to back her out, a loose two-by-four accidentally slipped from under her forefeet and she was badly frightened. She has always been used with an open bridle.

First of all I would advise trying a blinder bridle, either a half blinder or full flat blinder, as preferred. The mare should be well accustomed to it before trying to back her out of the barn. Do not overlook this important item.

Colts should be broken with an open bridle but afterward should be used either with or without blinders according to which they work best in. In this case I think the mare will behave better if she cannot see quite so much. Now put a "controller" on her, back her in the usual way with the reins, and when she attempts to jump ahead apply the pressure. If this does not work satisfactorily, tie a line to one forefoot between fetlock and hoof, pass it back through the bellyband, and when she attempts to spring ahead pull the line sharply and put her upon three legs.

Then talk to her soothingly, and as soon as she has quieted down make another attempt to back her out. Your whole effort must be given to backing her out and holding all the distance you have gained even if you gain only an inch at a time and it takes all day to accomplish the purpose. Be quiet and deliberate but resolute; remember that the mare behaves as she does because she is really afraid, and not from obstinacy or ill temper, and do not on any account lose your temper with her.

It may take a long time to back her out, but you may rest assured that if you once do this it will be easier each succeeding time. The case is a very simple one. All that is needed is patience and perseverance and a little good horsemanship. If you apply these qualities you are absolutely sure of success.

Just Grades!

By John Pickering Ross

TO BUY lambs soon after weaning and turn them out to graze on stubbles and mountain pastures, and eventually into the cornfields, is a good practice and should prove profitable.

At all events it is the cheapest and best way to get rid of the weeds and to improve the land.

Success will greatly depend on the lambs bought. Someone may say, "Of course 'mine are just 'grades,' good, bad, and indifferent," and it is just at this point that danger seems to threaten. Of course you will buy none but grades of one of the mutton-and-wool breeds—Shropshire, Hampshire, or Southdowns, and the nearer you can come to buying all of one type and breed the surer you will be of getting their full market value, for the buyers always pay most attention to the even-looking lots. It is well to bear in mind that a few poor lambs in a bunch of good ones is always used as a pretext to pull down the price, while a few good ones in a poor lot have no power to raise the price of the whole. It is therefore far better to have nothing to do with "indifferent or bad ones," though you should have to pay from fifty cents to a dollar more per head for a nice even lot, all docked and the bucks altered. A few long, dirty tails or uncastrated bucks will often spoil the sale of an otherwise nice bunch of lambs.

It is desirable to find out if the lambs have already been used to a grain ration. If they have it will pay to continue it for a short time, gradually reducing it from, say, a half pound per day, and resuming it a month before you propose to ship them. If you grow oats you can put them to no better use than to feed them to your lambs with a little bran or oil meal. You do not want them to run over seventy-five to eighty pounds by November, and they should be fat and well finished at those weights by then.

Removing Warts from a Cow's Udder

By Dr. A. S. Alexander

A FRIEND in Georgia writes me: "I have a fine Jersey heifer with first calf about one month old. Her teats are covered with warts of a seed-like nature." The warts are so numerous that the calf can only suck the back teats. The cow looks well and is in good condition otherwise. She gives me a great deal of trouble in trying to milk her. The warts came on her teats just before she calved. I am using castor oil on them, but it seems to do but very little good, if any."

As a rule daily rubbing with castor oil in time removes masses of small warts from teats and udder. Often the castor oil is of poor quality. One has to use the best cold-pressed castor oil and apply it freely twice a day. Good results also are had from the use of fresh goose grease, applied in same way, and I would advise using this if the oil that has been used is known to be of first-class quality and fresh.

If castor oil and goose grease fail, then try a mixture of one tablespoonful of bicarbonate of soda in half a cupful of melted lard, used once or twice daily. This usually works well and is an inexpensive remedy.

The Box-Stall Remedy

By David Buffum

"WHAT shall I do?" writes an Ohio reader. "I have owned one mare more than thirteen years. She is a Morgan, and certainly has been one of the best, but in the last year she has the habit of rapping the side of the stall with her hind foot after night. I don't know what started her. She is now sixteen years and goes well yet. She strikes the stall with her foot sometimes for two or three hours at a time."

The vice your mare has contracted is one of several that horses get into when standing in the stable with nothing to do. "Weaving," as it is called, a sort of rhythmic swinging of the head from side to side, is one; gnawing the wood of the manger or stall is another; crib-biting or wind-sucking is the worst of all. Horses that are constantly used are far less likely to form any of these habits. But as almost all horses that are kept for driving are, of necessity, idle more or less of the time, the owner has to take chances of his horse contracting them.

The best of all preventives is a roomy box stall; and so exceedingly desirable is this that it is well worth the while of every owner of a well-bred horse to provide one, even if at some inconvenience and expense.

Personally, so highly do I esteem box stalls that I have rarely failed to have them for all of my horses and colts that were of road stock, and some even for those of draft breeding. In a box stall a horse works off his nervousness by moving about; his hind legs do not stock up even if he spends much time in the stable; he is not likely to form the vices I have mentioned, and is in better shape for use after a period of idleness.

I mention this as showing the best means of prevention, which is always better

than cure of these habits. I am well aware, however, that it is not always practicable to provide a box stall; and what you want to know now is how to treat the vice under existing conditions. For this proceed as follows:

Have a strap made to huckle around your mare's foot—the one that she kicks with—between hoof and fetlock. Attach to this a piece of chain about a foot long, and to the end of the chain fasten a wooden ball a little larger than an ordinary croquet ball. Keep this contrivance on the mare whenever she is in her stall. She will not kick while wearing it, and after she has become thoroughly weaned from the habit it may be discontinued. Sometimes, indeed very frequently, the chain without the ball will be found entirely sufficient, and I would recommend that you first try the chain alone, and then, if you do not find it sufficient, attach the ball to it. A horse wearing this contrivance will be bothered a little at first about lying down and getting up, but he will soon learn how to manage it.

Another way and a better one for those who are so situated as to be able to carry it out is to discontinue the stall as ordinarily built and have the horse stand between two panels suspended by ropes from the ceiling. These, when kicked against, will swing back against the horse and he will soon learn to let them alone.

Still another way which very often, but not invariably, breaks up the habit, is to tie him in a corner of the barn without any stall whatever. This gives him room to move about a little and thus affords some outlet for the nervous energy which otherwise might find vent in kicking the side of the stall.

If EVERY lamb, every calf, every chick, every pig, horn on the farm this year is better than any ever grown there before, you will have had a good season. These are steps in the right direction, and they cannot help counting for success.

Giving Drenches to Horses

By Dr. A. S. Alexander

BY "DRENCH" is meant a copious dose of fluid medicine. These are now used less often than formerly. Many veterinary practitioners prefer to give small doses of medicine in a capsule or by means of a half-ounce hard rubber syringe. But colic drenches and pint or quart doses of raw linseed oil are still given to horses. Cows too are often physicked with a quart or two of epsom-salt solution, while sheep and lambs are given gasoline mixture for worms, and hogs now and then squealingly object to a big dose of castor oil or some such purge.

Before giving a drench be sure that it is needed, that it is a sane and safe dose and one that will not scald the mouth and throat. Like the delicious lump of candy sometimes accidentally swallowed by a schoolboy, the drench cannot be recovered when once it has passed the portal of the gullet. Many a horse has been badly scalded by an insufficiently diluted dose of turpentine or aromatic spirits of ammonia or chloral hydrate, and other animals may be hurt in like manner.

Back the Horse Into a Stall

The drench is to be given by way of the mouth; never by way of the nostril. Medicine poured into the nostril tends to flow into the lungs, where it will be sure to set up irritation and cause mechanical bronchitis or pneumonia. We have known of many an animal being killed in this way. The best method of drenching a horse is to back him into a stall, place the running noose of a small soft rope around the upper incisor teeth under the lip, throw the free end of the rope over a beam, elevate the head and hold it, by means of the rope, at such a height that the medicine will stay in the mouth and be swallowed. Now stand on a box or chair and pour the medicine into the horse's mouth from a strong long-necked bottle, in doses of about two ounces at a time until all has been swallowed. Do not grasp and squeeze the throat to make the horse swallow, and do not pull out the tongue. These acts hinder swallowing.

If the horse does not swallow readily tickle the roof of his mouth by rubbing with the neck of the bottle. If this does not suffice, pour a teaspoonful of cold water into one nostril, and swallowing will instantly occur. When drenching a cow put the medicine into a long-necked bottle. Confine the cow in a stanchion. Stand on her right side. Pass the left hand over her face and into the left side of her mouth to steady the head, which is to be held in a straight line with her body. Now pour the medicine slowly into the right side of the mouth. Let her head down instantly if she coughs.

A drench is given to a sheep by means of a bottle or a drenching horn. The animal may be straddled and its head held in a straight line. The dose must be given very carefully to prevent choking. A hog may be drenched from a bottle to the neck of which a piece of rubber hose has been attached; or cut a hole in the toe of an old shoe, let the hog chew on it and at the same time pour in the "dope." The hog may have to be held by means of a rope noose fitted on the upper jaw.

What the Pedigree is For

By William Galloway

THE true value of the pedigree that backs up a hog or any other pure-bred animal does not by any means lie in the proof thus secured that it is pure. A great many people make a serious mistake in their conception of pedigree, its use and its value. Not uncommonly we see people paying a little extra for a pure-bred animal and then, to secure a further reduction in price, declaring that they do not care to have it recorded, just so they know that it is eligible.

The value of pedigree lies entirely in what it proves, and the very least of its value is the proof of pure breeding. That, if anything, ought to appear to a sufficient degree in the general appearance of the animal. If it does not carry its pedigree on its back in this respect it certainly departs too far from the type it represents, to be a true representative in that class.

The pedigree is a convenient means of tracing individual or family tendencies. If an animal is good and if it comes from a long line of equally good ancestors, there is little danger of inferior progeny through back-breeding. If, on the other hand, the animal is good and there is no way of finding out what the characteristics of the ancestry back of it have been, we cannot tell whether we are purchasing transmissible excellence or whether the quality is only the product of liberal and skillful feeding; whether it begins and probably will end with the animal in question.

A Pedigree is a Record of the Past

Cattle bought for dairy performance or for their own carcass production may be judged directly, by their own individual appearance. Those bought for breeding purposes introduce in a measure the speculative element, and the only way to avoid this is to reduce the chance as far as possible to a scientific system of judging the future through the past. For this purpose the pedigree of an animal is invaluable. It is merely the record of what the past has been. If we find by an examination of the pedigree that a long line of prize-winners or of animals which were worthy of the prize ring back up the individual, we may feel reasonably certain that such an animal is worthy of a place in the breeding pens. The gambling element is eliminated from the deal and we are purchasing as much of a certainty as it is possible for science and common sense to provide for us. If, on the other hand, there is nothing above medium quality back of the animal, we are taking the gambler's chance if we buy the animal for a breeder, and no amount of high feeding or skillful grooming will greatly alter the chance.

The true value of a pedigree does not lie in what it asserts, but in what it enables us to find out; and the purchaser of a pure-bred animal who does not take the trouble to find out what the pedigree will tell him is more a gambler in futures than he is a breeder along sound, scientific lines.



Sendin' Shep after the cows may save your legs, but 'twon't save the cows' udders when Shep fetches 'em all up on the run.

Treatment for Swollen Knee

By Dr. A. S. Alexander

I AM asked to prescribe for a cow that has a large soft hunch on her knee, which her owner says seems to contain pus.

The hunch described is technically termed "hygroma." It is filled with serum, not pus, and was caused by bruising upon the manger, stanchion, or floor.

The popular method of treatment is to run a tape seton down through the cyst or sac and to pull the tape back and forward several times a day to cause the serum to flow out. Once a day smear the tape with iodine ointment.

It would be much better, however, to have the knee operated upon by a qualified veterinarian.

There are many cases just like this in that time and money are saved if the best of assistance is secured.



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The Market Place

Getting to the Market

By J. M. Taylor

AS A USUAL thing, a farmer who markets his produce in barrel or bushel lots rather than in car-load lots is satisfied to send the results of his labor to some commission merchant or wholesaler, receiving in return whatever the city merchant is willing to pay.

From the cities there is arising the constantly increasing complaint of the high cost of living. The city dwellers complain that they cannot purchase vegetables and produce at figures which touch within fifty per cent. the figures of a few years back. Furthermore, they complain that the produce which they purchase from the grocery stores and vegetable merchants is not as good as that to which they have become accustomed, even though the prices are higher.

The City Man Wants to Buy

These things have brought about a new era among the more careful householders of the cities. Instead of being satisfied, as he was a few years ago, to purchase his vegetables and produce from time to time as he might need it, trusting to luck that it would be good, the careful city dweller is to-day casting about him for opportunities to buy his cabbages, potatoes, etc., in barrel lots early in the season and maintaining his own supply through the winter. For this reason many city dwellers have constructed cold-storage closets in their cellars, where, year by year, they store their winter's supply of produce. And every fall these eager purchasers comb the market-places for the vegetables with which to stock their closets and cellars. Why should not the small farmer reap the benefit of this state of affairs?

Some of them do, but in the main the city purchasers are obliged to procure their goods from a wholesaler or commission merchant simply because they do not know

where to look to find them in the hands of the producing farmer. We have not yet learned the benefits of that great aid to business—advertising.

The cities are full of people who want to buy their goods direct, the country is full of farmers who would gladly sell direct for the sake of the additional profits to be gained by that mode of selling. All that remains is for them to get together.

Advertise Your Name

There is no need of an extensive advertising campaign, in fact no need of an advertising campaign of any kind. All that is necessary is a small display advertisement, costing perhaps a dollar and a half, in the leading newspaper of the nearest large city. And in writing the ad the farmer should not be bashful about having his name easily seen. Let him advertise Smith's potatoes, or Smith's cabbages, or whatever Smith has to sell. Do it in a manner that will leave the impression that Smith is proud of his cabbages, that he knows them to be up to standard and that he personally stands back of them. People will more readily buy of a man when he stamps his name on his goods in a manner which shows that he is not afraid to be known as their sponsor. Furthermore, it is good business, for if people buy Smith's cabbages this year and find them good they will clamor for Smith's cabbages next year and be satisfied with no others.

But there is an art in advertising, particularly at first. Make your ads attractive, and to be really attractive an ad must show a possible purchaser how he can procure perfectly standard goods at a price which is a little lower than he would be obliged to pay elsewhere. That is the secret of successful advertising, that and thrusting your name forward in such a way as to show that you are back of your goods and have confidence in them.

When you are ready to advertise look up prices in the city which you have selected as the scene of your operations. Find out the prices quoted on the line of goods you have to sell in that city. If you have no other way of doing it write to a wholesaler and ask. The best way, however, is to watch the ads of the produce houses in that city. Then, when you advertise, cut the market a few cents. You can afford to do it, for the amount you cut will not begin to be equal to the amount you would pay out in commissions should you sell through a commission house.

Fill Your Orders Correctly

Be sure and advertise your goods as shipped prepaid. You would be obliged to pay expressage and freight anyway if you shipped to a commission house, and you can allow for it in your private shipments. Furthermore, it attracts a buyer when the ad definitely settles that matter for him, for then he is not obliged to figure the matter out for himself, and the average buyer can be easily frightened off if he fancies that he sees a trap whereby he will be obliged to pay expressage or drayage.

Above all, when orders come in, fill them with satisfactory goods. You may be obliged to make a few concessions the first year, but the main thing is to get established. When you have made Smith's cabbages a standard commodity you will find that you can do business on a slightly more profitable scale, for a satisfied customer will always return and bring others with him, even though on the second season you do not cut the market price.

Sheep Advance, Lambs Don't

By J. P. Ross

A NOTABLE feature of the sheep market for the past few weeks has been the advance in prices of mature sheep, while those of lambs have fallen off. From the middle of last month the \$8 mark has been seldom reached, largely because weights have generally been excessive. By this time of the year lambs have become big and lusty, and it is pretty difficult to put a nice lamb finish on them and still keep them within the 80-pound limit. For this reason it is hardly likely that top prices will be high until the spring lamb crop comes to market. There will always be a demand for highly finished spring lambs, but they must not at the utmost exceed 60 pounds in weight. Within this limit they always command high prices.

On the other hand, the bulk of our mutton-eating population are learning to appreciate the food value as well as the flavor of the more mature sheep, and the wide difference between the prices of sheep and lambs which has so long prevailed will become gradually less. I do not think that there is any cause to fear a falling off in the values of either sort on the hoof, or any hope of being able to buy our mutton or lamb any cheaper when once it arrives at the butcher's block. The point, then, for the farmer to consider just now is how he can best use his feeding resources to meet these two distinct demands of the sheep market. It is well to bear in mind that sucking lambs cannot too soon be taught to eat both grain and hay, not only because this is necessary to their early growth, but because their introduction to concentrated foods, if left till later,

is liable to produce digestive complications of a serious nature. Forage crops and the early pastures will suffice for the present for the more mature sheep.

Another notable feature has been the readiness with which the market has absorbed the flood of unfinished stuff which has been forced on it. The distaste for fat meats, amounting almost to a national peculiarity, is largely accountable for this. The always wide-awake packers have been quick to recognize this opportunity to buy lambs at from 50 cents to \$1 less than they have had to pay for the better finished ones. The farmer and feeder have thus lost the best part of their profits which come from the last few weeks of finishing.

Above the Dead Line

By W. S. A. Smith

THERE is a good undertone to the cattle market. Stockers and feeders are now on a very high level and it takes some pretty close figuring to see how some of the late purchases can possibly pay out.

The sales of cattle at the Denver show beat all records, and some of the prices paid show either a wonderful amount of confidence in the future market or else a great deal of foolhardiness. Good feeders around 900 to 1,000 pounds are worth \$7.75 on the Western markets, and although I firmly believe we will have stronger markets for well-finished cattle within the next ninety days, those who are out of cattle had better stay out.

This is a bad time to speculate in steer stuff. There is, however, on nearly every farm quantities of waste, such as straw and fodder, which ought to be utilized, and by adding two pounds oil meal daily per head to such roughage it will be possible to keep a few cows and raise calves, or a few sheep and raise lambs, at a handsome profit; for there is no question but that there will be a shortage of cattle for years to come.

There is likewise no question but that the farmer who keeps live stock will in the next few years make directly and indirectly more money than the grain farmer.

If you think as I do, figure on it by growing less corn next year and growing some alfalfa or clover. Get some live stock on your farm, for although I do not believe in speculating in steers at present prices a man is perfectly justified in purchasing a few head of the stuff, especially if he can keep them on what is now absolute waste by simply adding a little oil meal to his waste. In all businesses the profits grow very quickly as soon as you get above operating expenses or above the dead line. The farmer who succeeds will be the farmer who knows where his dead line is. It is often possible to make more net money from the straw from a sixteen-bushel per acre crop of wheat, if it is used as part of a ration for cattle, than from the crop itself, for it is all above the dead line. The same may be said of fodder.

Don't Do It

By Dr. A. S. Alexander

I HAVE read with great interest the article in the January 3d FARM AND FIRESIDE entitled "Hog Cholera and the High-Brow," and although Mr. Welliver may possibly include me in that category of questionable repute I am constrained to give him and those who have read the article a bit of advice once given by "Punch" to those about to marry. It was short and to the point, being the curt remark "Don't." This advice is confidently given here, for double or simultaneous vaccination against hog cholera has proved so disastrous in Wisconsin that the plan has been practically abandoned in favor of a much more sensible and safe method of preventive procedure.

Mr. Welliver says, "Every litter of pigs will be given the double treatment, for permanent immunity, about a week after they are weaned." If that is done, a great many pigs may be destroyed; but one cannot predict the number. Sometimes many die; sometimes practically all survive. The Wisconsin plan, advocated to all patrons by Doctors Hadley and Beach, the veterinarians in charge of serum production and immunization of hogs at the Agricultural Experiment Station of Wisconsin, is comparatively safe and effective. We would not on any account give the double treatment proposed by Mr. Welliver, and would advise him not to do so. The new and safer way is to give each pig an injection of serum alone, to be followed in seven days, or a little more, by the injection of serum and virus. This gives permanent immunity and may be applied either to the infected or uninfected herd.

Permit me also to advise not to make the injection into the hams. That plan has often proved disastrous by causing abscesses which ruin the ham, wholly or partially. The pork-packers are up in arms against the plan, and are seeking some way of preventing this practice which causes serious loss. The best site to inject the serum is in the arm pit or the loose skin between the front leg and the body. Large hogs are snugged up to a post and vaccinated behind the ear.

Garden and Orchard

The Farm Garden

By Wm. J. Cooper

IT IS a good time of the year right now to see that your plans for the summer garden are well made. Read your agricultural papers. You will find some good ideas on the subject in them.

While I do not want you to think that I am boosting for the garden-seed business, I must say that I have found some mighty good things right in seed catalogues. It is not a bad plan to send for a few of them and study them over. I had far greater success with my gardens after having applied the methods shown in the catalogues. I had far better success with the seeds purchased direct from the catalogues than from "store" seed. Then, too, you have a much greater variety to choose from.

If you have been one of those farmers who fail to take the garden privileges offered on every farm, try to develop a good garden. The garden is one of the joy spots of the farm where it is well cared for.

Preparing for Top-Grafting

By C. M. Weed

BOOKS and bulletins commonly recommend that apple trees be top-grafted on the ends of long branches. The ordinary illustrations of the method show a large tree with scions set all over the outer part of the tree. This sort of recommendation is unfortunate, and is probably responsible for much of the current prejudice against top-working apple trees.

There are many objections to such a method of top-working. It requires many grafts to make the tree over, and then it is only made over on an outer fringe. All over the rest of the tree there will be a constant succession of suckers to be kept pruned off. The fruit will be higher up and often beyond reasonable reach, and will not be of the best size and quality because of the poor supply of sap so far from the roots. But the chief objection is that such a method is very likely to result in a poor union of scion and stock. Years are required for the branch to grow over and thereafter the flow of sap is so retarded that little fruit is set.

The accompanying photograph of grafted branches from my orchard shows very well the difference between the union on an old branch, such as are likely to be found in the top of the tree, and a young branch. In the one with two scions, years have passed with only a partial growing over of the cut end of the stock. In the other there has been a rapid growth and quick union of stock and scion, so that the one scion is completely united to the stock. Notice the difference in the characters of the two stocks as shown by the smooth, clean, healthy bark in one case and the rough lichen-covered unhealthy bark in the other.

In many trees to be top-grafted there will be found young healthy branches not over an inch and a half in diameter that may be grafted near their bases to advantage. If such are present the older limbs should be pruned away to give the younger ones a chance to grow. If no such young branches



A good union—one scion on a young branch

will be within easy reach. Two or three such branches started well down toward the trunk will soon make a new top for the whole tree, which will bear healthy fruit of good size and quality.

Obviously this method involves work in advance of the grafting rather than the common way of sending the grafter into the unpruned tree. This preparation may be done at any time, winter or summer; though care must be taken not to remove too much of the old top at once.

How I Planted 15,000 Trees

By J. D. Yancey

THIS being about tree-planting time, most everybody is talking of planting methods, so I may be excused for telling of a scheme that we used very successfully in planting fifteen thousand apple trees last spring.

The first care was to secure good nursery stock. To this end a reliable home nursery was visited and the trees selected in the field, stocky two-year-old trees with well-balanced heads being chosen. These were taken up a few days before planting time and heeled in at a location convenient to the fields to be planted, much care being taken in this operation to prevent the roots drying out. (In fact, the planter's greatest care, in a dry atmosphere such as we have here, is to keep it from the roots of the trees as much as possible.)

In heeling in the trees, the roots were never massed in large clumps, but spread in the trenches evenly, and fine soil sifted among them until all interstices were filled. Next, soil was shoveled in until the trenches were nearly full, and a stream of water turned in until all was thoroughly soaked, when the trenches were filled with earth and tramped firmly. All this takes time of course, but it pays in the end.

When planting time arrived five or six of the most careful hands were selected to form a planting crew. The trees were loaded into a wagon with a deep box and the hose turned on them. When the roots were thoroughly wet, fine, dry soil was sifted over them until they were covered with a moist paste which adheres very closely to the roots and excludes the air. After this operation a canvas cover was drawn over the load and fastened down all around, except on the sides, which were left loose for removing trees. In planting, two rows were carried on each side of the wagon as it traveled across the field. Each planter worked separately; that is, each dug the hole for his tree, then selected and removed it from the wagon, pruned the roots, and while the roots were still moist placed the tree in the hole and firmed the dirt around them with his hands until all openings among the roots were filled. Moist top soil was then shoveled in and tramped firmly, filling the hole about two thirds full, when it was left for the water man. A water wagon followed closely after the planters, and four or five gallons of water poured into each hole moistened and settled the soil still more closely about the roots. Still another man followed immediately after the water wagon and as soon as the water disappeared finished filling the holes with still more of the top soil, firmed it down level and leaving a mulch of loose earth on top.

After this the trees were headed, care being exercised to secure a well-balanced top; that is, with the limbs as evenly spaced as possible.

This sounds like a slow way of planting trees, in the telling, but it is not, our crew of eight men averaging eight hundred to one thousand trees a day, planted, watered, and covered. The best part is you can figure on every tree so planted making a start, and if it does not give a good growth it will be because you do not give it care afterward.

For planting on a smaller scale the plan can be modified, of course, to suit the requirements of the planter.



Scions on old branches are slow in uniting

are present a severe pruning-out of the top will cause a crop of "suckers" or "water sprouts" to start. Most of these should be cut away early so as to force the sap into a few favorably situated for grafting. These will then grow with astonishing rapidity, and will be large enough to graft in a year or two.

Such branches should of course be chosen low rather than high, so that the new top

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The Discontented Farm Boy

By Fred Telford



ONCE upon a Time the Farmers in a Community became interested in improving their Lot. They employed a County Adviser to tell them about balanced Rations for the dairy Cows and the best Rotation of Crops and what was the matter with the Soil. Half the Farmers owned Bulls with Pedigrees that made them blush when they thought of their own Family Trees. They formed a Company and imported a three-thousand-dollar Stallion and then paid an Expert seventy-five Dollars a Month to take proper care of the valuable Animal. In short, this Community had its Eyes open to the Things that make Country Life worth living.

But they carelessly stopped before they finished the Job. Three of the Members of the Horse Company were the District School Directors, and their Wives got crossed when they hired the Teacher. They picked a Slip of a High-School Girl who could not boil Water without burning it. She had always passed in her Work with high Marks because her Father was President of the Board. She knew more about Mashed Puffs and Directoire Gowns and dancing the Turkey Trot than about Reading and Arithmetic. But she knew how to dress, and she was willing to take the School for thirty Dollars a Month.

When the Girl came out from the City in September one of the first young Men she met was Bill, Son of one of the Directors. Bill was twenty and a Joy to his Father. He hit it off fine with the Girl until she noticed the accumulation of non-commercial Fertilizer on his Boots. Then she tilted her Nose at an Angle of forty-five Degrees and wiped Bill completely off the Map. And the old Man wondered why the young Fellow was all at once dissatisfied with Farm Life and wanted to get a Job in the City.

Moral: If you're going in for the Uplift, be consistent.

Making the Pears Produce

By A. J. Rogers

AN IOWA reader says: "I was out through my five-year-old pear orchard to-day and I find that the clover is all killed out. Would you plow it up and put

it in corn or let it lie and keep the weeds down by mowing? What is the reason some of the trees are scrubby and others are thrifty? The ground is practically new, rolling, and well drained."

I should not crop a five-year-old pear orchard. Mowing weeds down and maintaining in that way a mulch for some conditions is sufficient, but we usually prefer plowing and cultivating till the middle of July. We then sow down to a cover crop such as oats. These oats are not plowed under until the following spring. Other cover crops would answer; but for several years do not plant a legume. Too much nitrogen will indirectly cause the "fire blight." Neglect of cultivation and spraying very likely caused the scrubby trees.

A five-year pear orchard should not bear much. If only one variety is planted you may have trouble, for many pears, such as the Bartlett, demand cross fertilization.

You can't tell how hard a mule can kick by feeling his ears.

I FIND that hoping mixed with a generous amount of work usually brings what you want.

Plan Now for Strawberries

By T. Greiner

HILLS or matted rows—which are best for growing strawberries? Must the matted row be abandoned? We sometimes see strawberries grown in single hills in small home gardens. I have seen them thus also in large test plots (variety tests) on experimental grounds of various stations, for instance at the Ontario Agricultural College at Guelph. Even in large gardens we might set the plants eighteen inches apart each way, or twelve or fifteen inches apart in the rows, and the rows two feet apart. Keep the runners out, and the ground cultivated with hand tools, such as wheel hoes or hand plows, etc., and raise large plants and large fruit. But the great majority of the home gardeners still prefer the matted-row system, and probably they have good reasons for it. Nor does it look at all likely to me that the commercial grower, the man who plants acres of strawberries, will easily be induced to abandon the matted-row system for any form of hill culture. I can see no particular reason for it either, and shall stick to the matted row.

A brother of mine, G. C. Greiner, who may possibly be known to some of the FARM AND FIRESIDE family as an expert beekeeper, practices a modified matted-row system with great success and with satisfaction to himself. This method has some advantages, but requires considerable work and attention, for which the care of his bees gives him the time and opportunity. This plan is adapted to moderate home-garden operations, and people will not begrudge the attention and time when they see the splendid results.

A Modified Matted-Row Plan

He grows the Brandywine altogether. It gives a large healthy vine, and large, handsome, high-quality fruit. Other varieties, for instance Senator Dunlap, might suit other growers or other local conditions. For the home gardener here, especially in hill culture, the Brandywine will be hard to beat. My brother keeps a good-sized home-garden patch year after year, so that he always has or can get what plants he needs for a new bed. The plants are usually set early in August, or earlier if the plants can be had. He takes up, with shovel or spade, some good strong plants of the previous season's growth, perhaps some of the late settings on the outside of the old bed.



Fig. 1

plants that were too late to give much, if any, fruit. A good chunk of soil is left with each plant, and the plants are set singly, three feet apart, in rows four feet apart, in rich, clean and well-prepared soil, as shown in Fig. 1. The area on the sketch is laid off in blocks a foot square. The plants will soon throw out runners, and the strongest of these are trained and allowed to root in a regular circle around each plant as shown, five runners to the plant, all the other runners being removed as fast as they appear. This will give a width of matted row of two feet, with a path clear from plants two feet wide between each two matted rows. Of course in spring, when the plants make a strong and spreading top growth, the leaves will extend far into this clear path, and perhaps cover it to such a degree that but a small space in the center is left free for a visible path. The shaded irregular or wavy lines in diagram outline the area in each matted row which may be expected to become completely covered with foliage. The one advantage of this method of growing strawberries, besides the nice large fruit you will get, and the attractive

appearance of the patch, is the ease of keeping it free from weeds. If the plants are set in spring you will have to fight weeds all spring, summer, and fall. When you set them in early August you can have the bed so well prepared, and cleaned from all weed growth, and perhaps from the tendency to become weedy, that few weeds will trouble you the balance of the season, and that the bed will be weed-free in spring and ready for yielding a good crop. The reader may imagine that the diagram is a fancy picture such as is easily put on paper. The plants in my brother's patch stand just as regular, each in its right place, as indicated in the diagram.

Using Potted Plants

Quite frequently I make use of potted plants for starting a strawberry patch when I have neglected to make a planting in spring, or feel I have not set enough plants in spring to give me what berries I want. I try to get the plants as soon as possible after the fruiting season, not much later than middle of July. Fig. 2 represents an old strawberry plant (or a plant set in early spring) that has already thrown out several runners. The runners are made to take root in either thumb pots (as shown at the left) or paper plant boxes (as shown at the right) sunk into the ground. Hold the young plant on the right spot by placing a small stone or clod of earth over the runner. When pot or box has become well filled with roots the young plant may be



Fig. 2

severed from the parent plant, the pot or box taken up, the plant shaken out and carefully planted to make some runners in its turn and perhaps even form a matted row for next spring's fruiting. Some nice berries can be grown in this way, although hardly a full crop. We are satisfied with a half crop. Further south, however, larger and perhaps full crops may be secured in this way.

Some years ago Mr. L. J. Farmer of this State told me of a good way to handle strawberry plants received from the nursery or plantsman, especially at a time when the ground is not ready to receive them. The plants are set out, quite closely together, in a cold-frame, there to be watered, aired, and allowed to develop some new fibrous roots. They are here kept until the ground is ready and in best shape to receive them. This was called the "new strawberry culture."

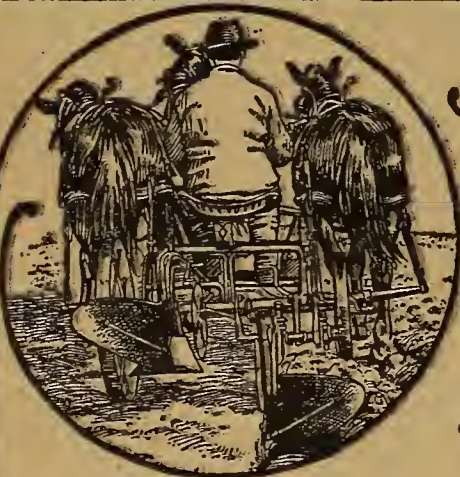
If the soil is just right and the weather conditions favorable, I prefer to set the plants, if fresh, as soon as received from the nursery or plantsman, directly in open ground. But if the plants are not exactly fresh, or if the ground is not ready to receive them, the plan of setting them in a cold-frame, and letting them there make a first start in growth, is certainly a good one and may save many plants.

The Loganberry

By W. D. Boynton

THAT remarkable hybrid has made tremendous strides in popularity since its advent a few years ago. While it seems peculiarly adapted to the west coast country, where it originated, it is also doing well below the Dixie line where introduced. The fruit in its best development looks like an enormously enlarged and elongated Cuthbert raspberry. It is a little more tart, and is excellent for jellies and flavoring syrups. It is also being dried or evaporated in immense quantities to take the place and uses of the dried raspberry. It is a tremendous grower and a heavy yielder.

It is vine-like in its growth, often attaining a length of twenty feet. It is trained on long wire, board, or pole trellises. While some merely twist it around a single pole or wire to keep it off the ground, the majority of the best growers provide two shelves—one for the current season's growth, and the other for the last season's or bearing wood to rest upon. In large fields the wire is best for this purpose, being supplemented by saw-notched strips to form the shelf for the vines to lie upon. In small patches like my own, the pole or narrow board is best, as they require no post-bracing as with the wire. The accompanying photograph shows a corner of my patch thus arranged. The rows are planted six feet apart, and the plants set twelve feet apart in the row. I train the current season's growth to lie along the upper shelf until after picking is over. Then I cut away the old wood, just picked, from the lower shelf and lower the new vines. The little cross strips forming the shelf are tacked to the poles with single nails. Occasionally one is nailed across over the vines instead of under, so that the vines are closely held in position. Without such restraint they are often whipped from the shelf by the wind.



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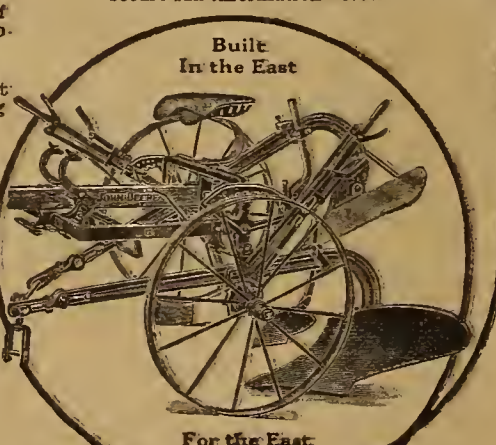
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The lower shelf is about twenty inches to two feet from the ground; the upper



Board trellises are good for small patches

shelf some three feet above this. In the large fields where wires are used these cross strips are notched on the under side, so that they drop down, enclosing the wires, and are thus held in place. The occasional one laid above the vines to hold them in place is tied down with stout strings.

Scores of carloads of these berries are annually shipped east from the river valleys of the west coast, barreled in sugar—a layer of sugar, then a layer of berries, alternating until the barrel is filled. In this way the fruit is shipped across the continent, arriving at destination in excellent condition for conversion into jellies, flavoring syrups, etc. This barreling process has lately become very popular in the handling of all berries to be used for these purposes. The Puyallup Valley Fruit Association and many of the fruit associations of the Willamette Valley are now barreling a good share of the berry products, including strawberries, raspberries, and blackberries.

In order to get a good broad bearing surface the tops should be cut back to ten feet in length in early March before the growth starts. This shortening-in causes a liberal lateral growth all along the length of the remaining stem, so that the broad shelf is filled with bearing wood.

The picking season of the loganberry commences just as the Cuthbert begins to fall off in its yield. It thus drops nicely into the succession of picking, coming as it does between the raspberry and the blackberry.

Exact Rules for Grape-Pruning

By H. F. Grinstead

THE most important item in the care and management of a vineyard is pruning and training; and this pruning is not simply a judicious thinning as with fruit trees, but one must follow a system of set rules.

There are several systems of pruning, but the same principles apply to all. It should be remembered that not all buds will produce fruiting branches next year, and the first thing for the novice to learn is how to distinguish between fruit-bearing and wood-bearing buds. Now, this difference is easily determined by the position of the bud. Let us call the branches which grew last year, and which have shed their leaves, canes. A cane which grew from one-year-old wood (one year older than itself) usually contains fruit buds, especially near its base, and will be fruitful. A cane which grew from wood more than one year older than itself will not be fruitful, such canes being easily recognized by their long joints and slim buds. These barren canes should be looked after, however, as they are important in shaping the vine for succeeding years.

The proper time to prune is any time after leaves fall in autumn till buds begin to swell in the spring, except when the wood is frozen.

As good a trellis as can be made consists of three wires supported by posts at convenient distances apart, the wires being eighteen inches apart, with the lower one twenty inches from the ground, and all securely stapled.

If you have young vines let them grow at will the first year, and at pruning time shorten back to one cane not more than two feet long. Tie this to the lower wire, and train the new growth along this wire as far as possible. After the first year the vines are pruned about the same every year.

After the second year, or if you have an old vineyard that has been neglected, you will want to leave two fruitful canes, each containing from ten to fifteen buds, which means that the canes should be from three to four feet long. It will not be difficult to determine the fruit buds, since they are plump and grow on short joints. If there are any side branches on these canes they should be cut back to two buds. The canes should be tied to one of the horizontal wires, preferably the lower one. As many as four

canes are sometimes left on exceptionally thrifty-growing vines.

In pruning the grape we have to look a year ahead; and while we aim to leave the proper amount of wood for next year's crop, we should not fail to look also to the production of shoots which will make good fruit canes for the succeeding crops.

The barren or long-jointed canes above mentioned will grow vigorous shoots from every bud, and these shoots will make the bearing canes of the succeeding year. It is best to select two such canes from as near the ground as possible, being sure that they come from the old wood or from the root. Coming as they do from old wood they will not bear fruit the next summer, but will produce long shoots of fruit-bearing wood that will bear the succeeding year. When you have selected two such canes cut them back to two buds, since to leave the entire cane would result in much unnecessary growth. The reason for getting this new growth from as near the ground as possible is that you may dispense with the old vine above that point at next year's pruning. The taking away of all superfluous growth adds vigor to that remaining as well as strength to the growing fruit.

Stated concisely, all the vines should be cut away except two fruiting canes three or four feet long, these canes coming from wood only one year older than themselves; and two spurs of new wood, containing two buds each, and coming from as near the root of the old vine as possible. There are a number of methods of pruning, but this paragraph gives the gist of the whole matter and so anyone can understand it. Usually the inexperienced is afraid of pruning too severely, and leaves more wood than is necessary.

As a rule, however, there is three times as much wood growth as needed.

GARDENING

BY T. GREINER

Lime for Asparagus

AN ASPARAGUS bed in heavy soil that is not well drained and at times wet may produce good stalks just the same (if otherwise rightly treated), but it is liable to get sour. We can easily satisfy ourselves, however, whether the soil is sour or not by testing it with a piece of blue litmus paper obtainable in any drug store. Bring this in direct and close contact with the moist soil for an hour or so, and if it turns pink, the soil is sour; if it remains blue, the soil is neutral or alkaline. At any rate, however, it will do no harm to apply air-slaked lime or ground limestone, say one hundred pounds on a bed thirty by forty feet, and do this as soon as possible. Nitrate of soda, say five or ten pounds, may be applied broadcast on the same area in early spring, just as soon as there is the first awakening of the plants from their winter sleep. Lime and nitrate of soda applications go well together. But try to provide good surface drainage for the patch if the underdrainage is not perfect. It is well to start a new plantation in a drier location, and one-year plants are just right to do it. If possible, select a loose friable loam, warm sandy loam being first preference.

Irrigating a Strawberry Patch

A two-inch feed pipe, laid from the city water works along one side of a field, will be sufficient for irrigating quite a number of acres, and wherever such water supply, under forty to sixty pounds' pressure, is available, a grower of garden vegetables or strawberries would be unwise if he were to neglect making full use of it. In my estimation no better plan of distributing water has yet been devised than the Skinner system. If the irrigating lines are only a hundred feet long, across the patch, then 3/4-inch pipe would be large enough, and when under sixty pounds pressure, may be laid sixty feet apart. The Skinner people have a special turning device and specially devised nozzles, the latter to be inserted every four feet in the distributing pipes, also a drill for drilling the holes for the insertion of the nozzles.

Garden-Truck Barrow

THE drawing to the right shows the appearance of this barrow, and the one to the left explains the construction. It is particularly adapted for carrying



boxes and crates of garden truck. The weight rests chiefly on the wheel and thus makes it easy to operate. A rope can be placed on the upper strip for a second man to pull by.

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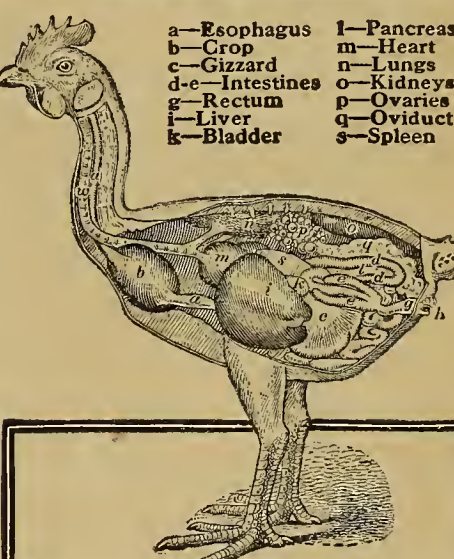


Potato Profits

depend largely on how the crop is planted. Every skipped hill is a loss in time, fertilizer and soil. Every double wastes valuable seed. It means \$5 to \$50 per acre extra profit if all hills are planted, one piece in each. That is why

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This is but one of ninety-five illustrations you find in the I.C.S. Poultry Handbook. It tells why a hen lays—why she does not lay—how to make her lay.

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The I.C.S. Handbook on Agriculture is another valuable handbook you should have. It contains 381 pages, and treats of Soil Improvement; Drainage; Tillage; Farm Crops; Fruit and Vegetable Culture; Livestock; Feeding; Diseases; Dairying; Bacteria; Bee Keeping; Implements; Machinery; Agricultural Tables, etc.

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Crops and Soils

Your Pocket is Your Office

By Edward Bell, Jr.

MY SYSTEM of cost-keeping is simple and is patterned after the ideas of the man who said he could figure any problem or count the cost of anything if you'd let him sit in the barn and figure on a shingle; but as for going into the office to work over a set of big thick books, why, he couldn't put a patch on the book-keeper's pants! I am a little like that fellow.

Below is shown a sketch of two sample pages, these being a record of growing potatoes for the year 1911. This system does not need any special kind of an expensive account book, any note book about 3 1/2 x 6 inches, or, in other words, coat pocket size, will do. Rule in two or three extra vertical lines till you have seven columns on two pages, as shown. Use two pages to each account and open a different account with each crop or kind of work you wish to keep a cost record of. Always keep the book in your pocket and jot down the figures while the men and yourself are at work. Record just where each man and horse is working and trust nothing to memory.

The advantages of this system are as follows:

1. The record is put down every day, and is therefore accurate and complete.
2. It never has to be transferred or copied, but forms a permanent record as it stands.
3. It takes no extra time. The book is always at hand and the writing is done at odd moments.
4. When finished the final results are quickly obtainable and easily referred to in future.
5. And lastly, in the remarks column you can keep track of methods and information other than cost, which is valuable for future reference.

EDITOR'S NOTE: The author of this pocket system of accounts gives no disadvantages, but isn't there one in the possibility of error? A number might be easily

gines to do the logging and blasting powder to shatter the roots of the largest stumps. "Snagging," or the pulling of small stumps up to six inches in diameter, can usually be done by horses, without the aid of block and tackle. A series of short, sharp jerks will pull out such stumps very effectively, though stubborn roots will sometimes be found. The larger stumps are left for the stumping machine, which follows after the blasting gang. Most stumps over fifteen inches in diameter come out better, it has been found, with the help of powder, which shakes them up and frees the dirt from the roots. Holes are bored down between the roots and an average to each stump of four one-pound cartridges of a special blasting powder are put in. Sometimes dynamite is used.

One Device That is Used

A type of stumping machine much in favor in the coast country is a remarkably simple contrivance. It is nothing more than a capstan fastened to two sills bolted together in the form of a V, and is operated by a long lever and a horse walking in a circle. Its power is tremendous, and the steady, relentless pull which it exerts brings down even the largest trees. A big fir seven feet in diameter was uprooted in a recent test in twenty-three minutes, with only two men to manage the machine, and one horse to drive it; another large tree was uprooted in thirteen minutes, without the use of powder in either case. Standing trees come down even better than stumps, because of the greater leverage. They fall to where the steel cable pulls them, and the pull is always direct from the capstan. It is put to the credit of one of these machines that with two men and one horse it cleared over two hundred acres of large standing trees in twelve months' time.

Now and then stumps are found that defy pulling. Pine trees on bench land send their roots down as far as fifty feet, with frequently also a tap root for an anchor. These come hard, and a stump only twelve inches in diameter may be in so tight that it has to be left.

The One-Horse Stump Puller Popular

The logging engine costs many times more than the stumping machine to begin with, and it is more expensive to operate. It works with a quick, tugging strain, instead of the slow, steady pull of the other, and consequently its wear and tear is much greater. A new suburban district at the edge of one of the coast cities was cleared a few years ago by the use of the engine and the gin pole. The land had been lumbered some years before, and the stumps left behind were very heavy. But the cost of clearing totaled \$170 an acre, and this convinced many farmers that for their purposes the donkey engine was too expensive. The one-horse stump puller, with powder to help, if necessary, is much more to their liking.

Getting Rid of the Debris

There is a difference in method, too, in getting rid of the debris after it has been loosened up. Immense heaps of it can be piled up, with the aid of a gin pole to fifty or sixty feet high, or the same amount of debris may be divided into a number of smaller heaps. The former method provides more spectacular fires, but it is not the best. It generates a terrific heat, with a wall of flame going up sometimes a hundred feet, and the result is that the soil underneath is often completely sterilized. This does not follow in such degree from the smaller fires, which are, moreover, easier to build.

Small-growth stuff may still remain after all this snagging, stumping, and burning.

Making a Farm Costs Money

Brush and second-growth trees which are too small to pull are mowed down and raked into windrows like hay, and then bunched up and burned. By this time the land is ready for the plow.

The winning of a farm from the bush or the virgin woods is sure to cost money, whatever method is used. Land that has been lumbered and left for some years to the wiles of wind and fire makes harder clearing than the original forest. But the cost can usually be reduced by a careful selection of certain by-products. Out of even the worst tangles some good saw logs can be rescued, and in most places they are very marketable. It used to be that everything smaller than saw logs was burned, but the farmers now see the folly of such a plan, and instead they are saving everything that will make into railway ties, telephone poles, fence posts, and such like. After that there is



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Two facing pages from the records

misplaced, or the figures in the columns might be misinterpreted in adding, when such an error could be avoided by using carefully ruled books such as are kept in offices. There are just such errors in the pages shown, but the system is a convenient one nevertheless. Perhaps it's just the one you have been looking for.

Clearing Woodland Farm Sites

By Aubrey Fullerton

WHERE it costs from \$50 to \$150 an acre to clear land for farming, as it does in the heavily wooded country of the northern Pacific States and British Columbia, stump-pulling methods are an important part of farm science. Land clearing is done better and more economically than it used to be. Logging engines and gin poles were once the generally accepted means of operation, but simpler methods have now been found to give better results in average cases. Experienced men recommend the use of three methods concurrently—stumping machines to do the pulling, donkey en-

	Page	Kind of Work	Men	Horses	Hours	Remarks
May 20	1891	Plowing	1	10	2	20
3		"	1	10	2	20
5		Hauling manure	3	30	4	40
8		Harrowing	1	10	2	20
9		Scaring	1	3	1	3
12		Cutting weeds	2	18	—	—
13		Planting	1	5	2	10
June		Cultivating	1	4	2	8
2		Spraying	2	18	—	—
10		Cultivating	1	4	2	8
July		"	1	4	2	8
2		Spraying	2	20	—	—
20		Cultivating	1	4	2	8
Aug		Fixing fence	1	5	—	—
Sept		Raising	4	40	2	20
2		"	4	40	2	20
6-7		Hauling to market	4	70	2	40
		at 15c		275		215
		at 20c		375		300
		at 25c		425		330
		at 30c		475		360
		at 35c		525		390
		at 40c		575		420
		at 45c		625		450
		at 50c		675		480
		at 55c		725		510
		at 60c		775		540
		at 65c		825		570
		at 70c		875		600
		at 75c		925		630
		at 80c		975		660
		at 85c		1025		690
		at 90c		1075		720
		at 95c		1125		750
		at 1.00		1175		780
		at 1.05		1225		810
		at 1.10		1275		840
		at 1.15		1325		870
		at 1.20		1375		900
		at 1.25		1425		930
		at 1.30		1475		960
		at 1.35		1525		990
		at 1.40		1575		1020
		at 1.45		1625		1050
		at 1.50		1675		1080
		at 1.55		1725		1110
		at 1.60		1775		1140
		at 1.65		1825		1170
		at 1.70		1875		1200
		at 1.75		1925		1230
		at 1.80		1975		1260
		at 1.85		2025		1290
		at 1.90		2075		1320
		at 1.95		2125		1350
		at 2.00		2175		1380
		at 2.05		2225		1410
		at 2.10		2275		1440
		at 2.15		2325		1470
		at 2.20		2375		1500
		at 2.25		2425		1530
		at 2.30		2475		1560
		at 2.35		2525		1590
		at 2.40		2575		1620
		at 2.45		2625		1650
		at 2.50		2675		1680
		at 2.55		2725		1710
		at 2.60		2775		1740
		at 2.65		2825		1770
		at 2.70		2875		1800
		at 2.75		2925		1830
		at 2.80		2975		1860
		at 2.85		3025		1890
		at 2.90		3075		1920
		at 2.95		3125		1950
		at 3.00		3175		1980
		at 3.05		3225		2010
		at 3.10		3275		2040
		at 3.15		3325		2070
		at 3.20		3375		2100
		at 3.25		3425		2130
		at 3.30		3475		2160
		at 3.35		3525		2190
		at 3.40		3575		2220
		at 3.45		3625		2250
		at 3.50		3675		2280
		at 3.55		3725		2310
		at 3.60		3775		2340
		at 3.65		3825		2370
		at 3.70		3875		2400
		at 3.75		3925		2430
		at 3.80		3975		2460
		at 3.85		4025		2490
		at 3.90		4075		2520
		at 3.95		4125		2550
		at 4.00		4175		2580
		at 4.05		4225		2610
		at 4.10		4275		2640
		at 4.15		4325		2670
		at 4.20		4375		2700
		at 4.25		4425		2730
		at 4.30		4475		2760
		at 4.35		4525		2790
		at 4.40		4575		2820
		at 4.45		4625		2850
		at 4.50		4675		2880
		at 4.55		4725		2910
		at 4.60		4775		2940
		at 4.65		4825		2970
		at 4.70		4875		3000
		at 4.75		4925		3030
		at 4.80		4975		3060
		at 4.85		5025		3090
		at 4.90		5075		3120
		at 4.95		5125		3150
		at 5.00		5175		3180
		at 5.05		5225		3210
		at 5.10		5275		3240
		at 5.15		5325		3270
		at 5.20		5375		3300
		at 5.25		5425		3330
		at 5.30		5475		3360
		at 5.35		5525		3390
		at 5.40		5575		3420
		at 5.45		5625		3450
		at 5.50		5675		3480
		at 5.55		5725		3510
		at 5.60		5775		3540
		at 5.65		5825		3570
		at 5.70		5875		3600
		at 5.75		5925		3630
		at 5.80		5975		3660
		at 5.85		6025		3690
		at 5.90		6075		3720
		at 5.95		6125		3750
		at 6.00		6175		3780
		at 6.05		6225		3810
		at 6.10		6275		3840
		at 6.15		6325		3870
		at 6.20		6375		3900
		at 6.25		6425		3930
		at 6.30		6475		3960
		at 6.35		6525		3990
		at 6.40		6575		4020
		at 6.45		6625		4050
		at 6.50		6675		4080
		at 6.55		6725		4110
		at 6.60		6775		4140
		at 6.65		6825		4170
		at 6.70		6875		4200
		at 6.75		6925		4230
		at 6.80		6975		4260
		at 6.85		7025		4290
		at 6.90		7075		4320
		at 6.95		7125		4350
		at 7.00		7175		4380
		at 7.05		7225		4410
		at 7.10		7275		4440
		at 7.15		7325		4470
		at 7.20		7375		4500
		at 7.25		7425		4530
		at 7.30		7475		4560
		at 7.35		7525		4590
		at 7.40		7575		4620
		at 7.45		7625		4650
		at 7.50		7675		4680
		at 7.55		7725		4710
		at 7.60		7775		4740
		at 7.65		7825		4770
		at 7.70		7875		4800
		at 7.75		7925		4830
		at 7.80		7975		4860
		at 7.85		8025		4890
		at 7.90		8075		4920
		at 7.95		8125		4950
		at 8.00		8175		4980
		at 8.05		8225		5010
		at 8.10		8275		5040
		at 8.15		8325		5070
		at 8.20		8375		5100
		at 8.25		8425		5130
		at 8.30		8475		5160
		at 8.35		8525		5190
		at 8.40		8575		5220
		at 8.45		8625		5250
		at 8.50		8675		5280
		at 8.55		8725		5310
		at 8.60		8775		5340
		at 8.65		8825		5370
		at 8.70		8875		5400
		at 8.75		8925		5430
		at 8.80		8975		5460
		at 8.85		9025		5490
		at 8.90		9075		5520
		at 8.95		9125		5550
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		at 9.60		9775		5940
		at 9.65		9825		5970
		at 9.70		9875		6000
		at 9.75		9925		6030
		at 9.80		9975		6060
		at 9.85		10025		6090
		at 9.90		10075		6120
		at 9.95		10125		6150
		at 10.00		10175		6180
		at 10.05		10225		6210
		at 10.10		10275		6240
		at 10.15		10325		6270
		at 10.20		10375		6300
		at 10.25		10425		6330
		at 10.30		10475		6360
		at 10.35		10525		6390
		at 10.40		10575		6420
		at 10.45		10625		6450
		at 10.50		10675		6480
		at 10.55		10725		6510
		at 10.60		10775		6540
		at 10.65		10825		6570
		at 10.70		10875		6600
		at 10.75		10925		6630
		at 10.80		10975		6660
		at 10.85		11025		6690
		at 10.90		11075		6720
		at 10.95		11125		6750
		at 11.00		11175		6780
		at 11.05		11225		6810
		at 11.10		11275		6840
		at 11.15		11325		6870
		at 11.20		11375		6900
		at 11.25		11425		6930
		at 11.30		11475		6960
		at 11.35		11525		6990
		at 11.40		11575		7020
		at 11.45		11625		7050
		at 11.50		11675		7080
		at 11.55		11725		7110
		at 11.60		11775		7140
		at 11.65		11825		7170
		at 11.70		11875		7200
		at 11.75		11925		7230
		at 11.80		11975		7260
		at 11.85		12025		7290

firewood, and many cords of good fuel are taken out when near enough to shipping facilities to make it practicable. In these various ways a saving can be made on the cost of land clearing of from twenty-five to seventy-five dollars an acre.

The King

I ASK you to sign my next petition because: I am the mightiest king that ever lived. Other kings have yielded to me as a child to its sire, even have I laughed at all the gods of every land from Osiris to Jehovah.

With my breath have I wiped whole nations from the face of the earth.

For me have men discarded honor and women virtue. I destroy ambition, shame priests, debauch nuns, ruin statesmen—and still they love me.

I fill insane asylums and prisons, house my subjects in hovels and feed them on husks. Still they love me.

Fathers give me their sons, mothers their daughters, and maidens their lovers, and beg me to stay.

With one touch have I ruined great industries.

Judges yield to my power and advocates forget under my spell to plead.

I burn cities. With one touch have I sunk navies and destroyed great armies.

I never sleep.

I turn gold into dross, health into misery, beauty into caricature, and pride to shame. The more I hurt the more I am sought.

I, by turns, raise a man to highest heaven and sink him to deepest hell.

I am Satan's right-hand man. I do his work freely, cheerfully, and without pay, yet he is ashamed of me.

My name is Rum. Have you ever heard of me?—Dr. A. F. Bonney.

Selling Home-Mixed Fertilizers

By W. E. Meeker

WHILE in attendance at our State University at Columbus, Ohio, I became much interested in the course in soils and fertilizers. As home-mixed fertilizers had never been used in our community I decided to present the matter to the farmers and find out if they were willing to give it a trial. I was much surprised to find the majority of them easily interested in the subject. After three days' canvassing I found that I had enough orders for a small carload, and within two weeks I received enough orders to make a total of thirty tons.

The material, consisting of acid phosphate, nitrate of soda, muriate of potash, and a small amount of steamed bone, arrived from Cincinnati in good condition.

In selling this material I sold ton equivalents—that is, enough actual plant food to furnish the per cent. required in a ton of given formula. Thus in a ton of 1-8-2, 1,143 pounds of 14 per cent. acid phosphate, 110 pounds of 18 per cent. nitrate of soda, and 80 pounds of muriate of potash were necessary, making a total of 1,333 pounds. If put on the market by a manufacturer of commercial fertilizers, 667 pounds of "filler" would have been added to complete the ton.

Knowing the per cent. of ammonia, phosphoric acid, and potash in the materials selected, it is an easy matter to calculate the pounds of each necessary to furnish any formula desired. For example, a 1-8-2 brand would be figured as follows:

$2,000 \text{ lb} \times .01 = 20 \div .18 = 110 \text{ lb}$ nitrate of soda.
 $2,000 \text{ lb} \times .08 = 160 \div .14 = 1,143 \text{ lb}$ acid phosphate.
 $2,000 \text{ lb} \times .02 = 40 \div .50 = 80 \text{ lb}$ muriate of potash. Total, 1,333 lb.

Know Your Fertilizer

The rule for reckoning is simply to take such a per cent. of a ton (2,000 lb)—as given by the formula to be used, and divide the product by the per cent. of that particular plant food carried in the material. This rule can be employed in figuring out the ingredients for any mixture wanted. In describing fertilizer mixtures in the numerical way, for example 1-8-2, it is always understood that the first figure means the fertilizer containing nitrogen, the next phosphorus, and the last potassium.

One agent for ready-mixed fertilizers wondered how the farmers could be persuaded to buy thirteen- or fourteen-hundred-pound tons. However, the fact that a large amount of "filler" of no use to the plants is used in ready-mixed fertilizers was understood by nearly all the farmers. They didn't want to pay freight on "filler."

The mixing of these materials was more simple than I had expected. A shovel, a hoe, and a coarse screen were all the tools we found necessary to obtain a thorough mixture. The nitrate of soda was the only material which needed screening, and this was done in a short time.

We found it most easily mixed by first spreading a layer of acid phosphate on a tight barn floor and then alternating layers of nitrate, muriate, and acid phosphate. After mixing it with a hoe and shovel just as cement is mixed, we heaped the mixture up in a conical pile. Then, after respread-

ing it on the floor, we worked it over again with the hoe; and then sacked it. We used no filler, and the mechanical condition was such as to insure its drilling without trouble. Two men can easily mix a ton in two hours. Any amount can be mixed at one time, depending upon the floor space available. This mixture, at this writing, has been standing more than three weeks, during which time the air has been very moist, but as yet it has shown no tendency to harden.

I was able to sell any of the various formulas for from five to ten dollars less on the ton than they could be bought in the ready-mixed form. In the case of a mixture containing eight or ten per cent. potash, a saving of ten dollars or more per ton could be made.

My Receipts Were Large

I purchased the material and charged the farmers \$1.50 per ton for my work. After deducting all expenses I found that I had cleared about fifty dollars. My receipts for this past fall were much larger. The experiment stations have clearly demonstrated that equally good results are obtained from home-mixed fertilizers, and there is a better opportunity to obtain just the plant food needed for any particular crop.

The grades of fertilizer mostly used in our neighborhood are 1-8-2, 2-8-2, 2-6-6, and 2-10-4. For potatoes, tobacco, and truck I sold a 2-8-8 mixture. The fact that I had made a study of fertilizers caused many of the farmers to take what I advised.

More About Sweet Clover

SWEET clover is coming into its own. The last helpful utterance on the subject of this great forage plant comes from Eckhardt of Illinois: "Sweet clover," he says, "is a wonderful plant, but study it carefully, for it will not grow in the fields as it does along the roadside."

The reason for this, he thinks, is that the fields are not likely to be either as well inoculated with the sweet-clover bacteria or as well supplied with lime as the roadsides. It gets its own nitrogen out of the air.

Professor Eckhardt has words of wisdom on the use of sweet clover in the rotation. It must be cut for hay about a month earlier than red clover—a bad time in the Corn Belt on account of both rainy weather and corn-plowing. Cut for seed it can stand until July or August—and the seed from four acres would have brought one DeKalb County man \$150 if he had accepted the offers received. It may be pastured close, however, long enough to postpone the haying of it until after corn is laid by. Or the sweet clover field may be divided, and one half pastured until after the other half has been cut for seed and started to grow again. Then the stock may be pastured on the seed half, and the pasture half will grow a fine crop of hay to be made in the fall. If the sweet clover for seed is handled loose, enough seed will shatter so as to reseed the field, and thus a permanent field will be established, half pasture and half meadow.

Some of the Fields Needed Lime

Professor Eckhardt examined some five hundred acres of sweet clover in Iowa and northern Illinois in 1913, much of it a complete failure on account of lack of lime and absence of inoculation. He recommends inoculation of seed by the glue-water method. "Dissolve a pound of liquid glue in three gallons of water, and about one quart of this solution will moisten one bushel of seed sufficiently so that dry sifted inoculated soil will adhere to the seed when thoroughly mixed with it."

FARM AND FIELDSIDE has recommended a practice favored by Eckhardt, that of sowing a little inoculated sweet clover or alfalfa seed with the regular seedlings of grass and clover. If this practice is followed up the whole farm will soon be inoculated for either alfalfa or sweet clover. They carry the same sort of inoculation.



Lem Sturgis is a good example of what can be done by specialized farming. Lem raises a grouch every time he goes into the field.

Every puff of P. A. is a wallop!

Get that punched into your system!

Never was such jimmy pipe tobacco, because no other tobacco but P. A. ever was made by the patented process that cuts out the bite and the parch!

You, and every other man, can smoke all you want if you'll only get wise and stick to

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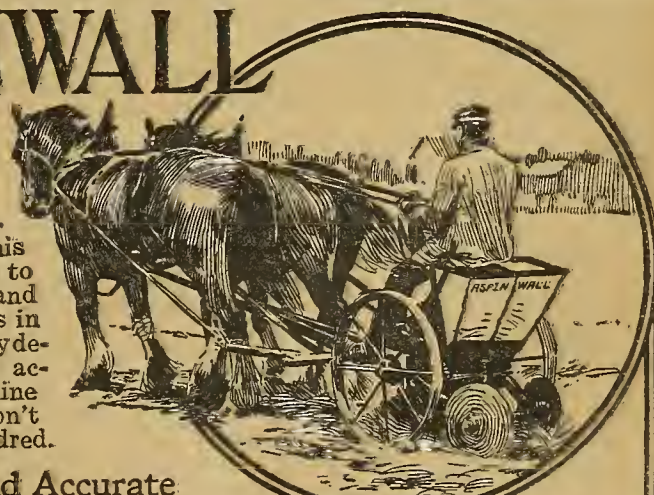
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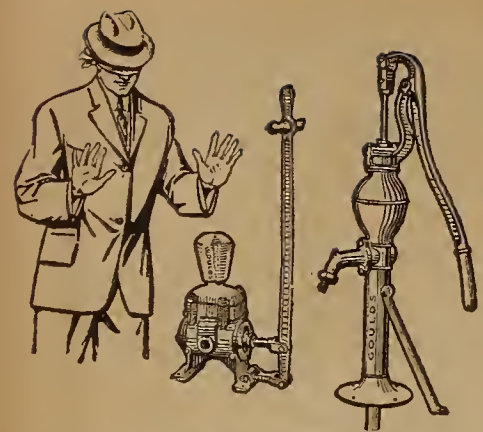
Is so easy to operate. On account of its light draft you plant more acres a day than with the ordinary planter. You require no extra man. There is no changing or adjusting of pickers for planting different sizes of seed. The canvas sack hopper doesn't clog the seed.

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Farm Wit and Wisdom

The Agent's Success

SOME two years ago a movement was set on foot and money solicited to employ a farm demonstrator for Frederick County, Virginia. One year ago sufficient funds had been collected to insure the carrying out of this plan. Mr. C. E. Koontz, a graduate of the Agricultural Department of the University of Wisconsin, was engaged and took charge of the work at the beginning of 1913. Mr. Koontz has an office in Winchester, the county seat, and is furnished with an automobile for his exclusive use in visiting farms.

One of his first achievements was to get started in the county about three hundred acres of alfalfa and mixed grasses the first year, and a much larger acreage is planned for this year.

Flattering Results With Alfalfa

Mr. Koontz had been here several times during 1912, having been secured from the State Department of Agriculture by a few alfalfa enthusiasts who sowed small plots of alfalfa in the fall of 1912, with a result, in most cases, quite flattering. The writer cut (in four cuttings) approximately four tons from an acre sowed August 30, 1912, and the patch went into winter with a six to eight inch growth.

Probably the most important of Mr. Koontz's work was the organization of a Live Stock Breeders' Association. This association has undertaken the plan of community breeding, and has chosen the Holstein for its standard. The association brought over seventy-five pure-bred and grade cows into the county—mostly heifers due to freshen during the winter. In addition, through its influence, about an equal number have been brought in by speculators. This stock came from the best dairy sections of Ohio and New York. The cattle brought in by the association were selected by two members of the association who were delegated to buy the stock. They secured the aid of a government veterinarian, and each animal was tuberculin-tested before being loaded on cars. The cattle were furnished the members at actual cost, the two members delegated serving without remuneration for their time.

About one dozen young pure-bred well-pedigreed bulls were also brought in and distributed over the county. At this writing a movement is on foot to form a bull club, stationing about four bulls at convenient points in the county, changing bulls every two years. Thus one bull can be used for eight years of actual service without much, if any, inbreeding.

It is the purpose to sell cream, using the skim milk on the farm for pigs and poultry. There are now in the county three cream-buying agencies. A large number of farmers have hand separators. In addition there are several points where milk may be separated by power. The milk is paid for on a butterfat basis, and the skim milk is returned to producers.

The presence of these cattle also compels the erection of silos, which we are glad to note are becoming more popular and plentiful each season, thus utilizing a much larger portion of the corn crop than under the old system of "fodder and nubbins" for the cows.

Sufficient money has been raised to keep Mr. Koontz with us during 1914.—G. L. R.

Some Views on Taxation

WE DOUBT if a perfectly satisfactory system of taxation will ever be found. The system we now have is imperfect, and most of the new systems which are so promising have the fault that they are too new and have not been tried long enough. Still, aside from actually trying them, the best way to find their defects or good qualities is to thresh them out in a free-for-all discussion. Here are some thoughts sent in by readers of FARM AND FIRESIDE who evidently have been doing a good deal of thinking. We publish these chiefly to stimulate thought and discussion on this subject. The first is from Bonner Springs, Kansas:

I have honestly tried to make a Socialist out of myself because Socialists seem to be trying to help the under dog. But I simply can't accept confiscation and government ownership of all the land, which would necessarily include the home. Of course many Socialists do not go that far, but those that seem to have all the say do. Neither can I believe in the Single Tax, because it is capitalism sitting on labor and trying to lift labor up without getting off labor's back. I have read a few books on anarchy, but they are not worthy of passing comment. My idea of taxation is that every man's home and self-tilled farm should be

exempt from taxation. First, because should death call the head of the family in early life the widow and the orphans should not be compelled to pay taxes on their home, the one refuge of life. Second, when the home-owner grows old and reaches the non-productive age, the Single Tax is criminal in its grip. Third, any man who is honestly making a home should not be taxed for so doing.

I am opposed to taxing private property, and I know nothing more necessary or more private than the bit of land on which every man is entitled to make his home.

Public-service corporations should be owned by the Government and operated at a profit, the profit being added to the government revenues.

There should be income and inheritance taxes. I would be willing to see all rental land, both city and country, taxed at the full rental value. I would vote for Socialism sooner than for the Single Tax as now taught, and I am not a Socialist as Socialism is now taught. Big land values in the cities would not help us out in Kansas unless all the taxes were thrown in a jack pot and divided up per capita.

The whole world seems to be moving toward the abolishment of landlordism, and the move looks good; but we do not want to drop into something worse if we can help it. This is the best age the world has ever known, but there is room for improvement.

The letter that follows is from one of the best farmers in the United States. He has made good on a sixty-acre farm in Wisconsin, and is one of the Wisconsin Institute lecturers. He is a thorough believer in the taxation of land values only, exclusive of improvements.

So far as we know, there is land enough in the world to supply all the needs of the human race for all time to come. The apparent scarcity of land is due entirely to social mismanagement. As things are now run, land speculators are permitted to buy up the arable land just ahead of society's needs, and in this way produce an artificial scarcity. By the non-taxation of labor's product the land speculator would soon be put out of business, and, as the result of this, land would become cheaper in price but more valuable as a source of wealth production than ever before.

Cheap land means high-priced labor. In other words, it means that labor will get its full share of the wealth it has helped to produce, the moment this artificial scarcity of land is done away with so that labor can employ itself if it is not satisfied with the wages of the employer class.

Be Optimistic!

A BOY on a farm is worth two in the city.

KINDLINESS helps iron out the wrinkles of life.

You may be "down," but you can't be counted "out" until you give the signal of defeat.

THE country boy or girl, man or woman, who will do as well as yearn has struck a gold mine.

Too Much Money

By Chas. B. Driscoll

TOM PARHM, a lawyer friend of mine, has gone to farming. Likes it fine, he says, and puffs a big cigar, out where his Showshire stables are. Now Tom is not a farmer boy. He never knew the healthy joy of freezing ears and nose and toe while hauling logs through drifted snow. In fact he never milked a cow, and doesn't do it even now. He made ten million shining bones, and all the other things he owns, by cheating hangmen of their prey and taking all the loot for pay, so he don't miss a million much when spent for pacing cows and such.

Tom never saw a farm, I guess, until he purchased "Brown's Distress." That's what the neighbors called the place he bought last fall. 'Twas a disgrace to hear the people hereabouts make sport of Parhm with ribald shouts for buying swamp and hills of sand with cash that might have bought him land.

My lawyer friend is cutting down the hills. He motors from town most every day with some new scheme for irrigation, or some dream of how to spend a lot of cash in raising camels on bran mash, or other plan more foolish still. He's built a mansion on one hill and moved two swamps a half a mile to make a lake. To see him smile while watching forty workmen do a job that might be done by two, you would suppose he'd lost his mind, or suddenly had been struck blind.

It's plain to see my friend Tom Parhm will not make money on his farm. A clever man, who made his roll by bleeding chumps and taking toll of every crook and thief and shark, has all at once become a mark, a boob, a simp, a very hick whose methods would make farm hands sick, and all because he has combined a farm, a fancy unconfined, and too much money. Sad mischance that led to such a circumstance!

How Much Moisture in Butter?

SOMETIMES a purely technical matter has a great deal of influence on big industry. Such a matter is that of the amount of moisture which shall be allowed in butter. Being a manufactured product, butter can be made so it will contain a great deal of water or only a little. The butterfat is the most expensive part of butter, and if the big creameries and others who make large amounts of butter can keep the amount of butterfat low and the amount of moisture high, there is a great chance for profit and fortunes.

Butter as ordinarily made contains from eleven to fifteen per cent. of moisture. The amount of moisture depends a great deal on the temperature of churning and the amount of working given the butter. With the big-factory combined churuses and butter-workers, operated by skilled men, the moisture in butter can be run up to twenty per cent. or more without seemingly hurting the quality of the fresh butter. A few States have laws fixing the high-water limit for butter at sixteen per cent. or less. These laws follow the U. S. Internal Revenue ruling which makes criminal the sale of butter carrying sixteen per cent. of moisture or more. Of course any standard is arbitrary. Sixteen per cent. was chosen because the moisture in ordinary butter seldom goes that high except where there is a deliberate intent to adulterate the butter with water.

This ruling has been distasteful to a number of big creameries, especially the Western creameries, which make butter in such large quantities that the addition of a fraction of a per cent. to the weight of butter means thousands of dollars to them every year. Their buttermakers come as near to the sixteen-per-cent. limit as they dare. Sometimes butter containing a little over sixteen per cent. is made and kept in storage until enough of the moisture evaporates or drains out so that it may be put on the market without violating the ruling.

A large centralizer creamery in St. Paul has brought suit against the Internal Revenue Department for the amount of a fine assessed against the creamery under this regulation, and the Federal Court has sustained the creamery.

Butter Has No Twin

FARM AND FIRESIDE believes that laws rather than ruling should control matters of this kind, but when the laws are inadequate rulings are better than nothing. A farmer who is making butter cannot hope to compete with creamery butter if the creameries are permitted to overload their butter with moisture. A creamery man in South Dakota told the writer that he could put in forty per cent. of water if the Government would let him. But in the average farm dairy, moisture cannot be juggled around in that way. With the churns now in use farm butter will continue to have the normal amount of moisture, namely from eleven to fifteen per cent. If farm-made butter is to be protected against unfair competition the sixteen-per-cent. standard ought to be supported and made a law to keep the name "butter" from being libeled and misused by a product which is merely water-logged butterfat. If creameries are permitted to sell water for butter the reputation of butter and the reputation of the dairy business is going to suffer.

"Water-loaded" butter is really in the same class with the better grades of oleomargarine. One has water mixed in and the other has animal fats mixed in. There is really little difference between the two. Each is trying to pass itself off as a twin brother to butter, and butter has no twin.

The Deadly Dog

THE federal meat inspectors on duty at the packing houses last year found more than seventeen thousand sheep carcasses infested with a disease called "sheep measles." The disease consists of parasites in the muscles. It is derived from the tapeworm of the dog. The tapeworm eggs pass off from the droppings, the sheep are infected from the pasture, and the dog gets the tapeworm from eating the sheep—thus completing the cycle of life for the parasite and of death for the sheep. People who like both dogs and mutton will have to accept the measles as a part of the combination.

EVERYBODY has seen the green slime in stagnant pools, and almost everybody knows that it is often, if not always, caused by the growth of very small plants called algae in the water. The slime is green, the plants are green, the only difference between these small plants and large ones lies in their small size. But when Prof. Robb of Colorado found a green slime in some cream separators in that country, he astonished the owners of the separators by showing them with a microscope that these little plants were the cause of the trouble in the separator just the same as if it had been in a frog pond. The cows had dragged their udders through mud, the mud contained the slime plants, the plants got in the pail—and you may trace them the rest of the way yourself. The remedy? Greater cleanliness, of course.

Why not the slogan, "A grove on every farm." It can be realized and then utilized for profit and beauty

Choosing Your Neighbors

A CERTAIN farmer had one hundred acres of meadow land through which ran a pretty river. The farmer had a family including several daughters, and he was anxious to have good neighbors.

A friend in a near-by city induced him to sell, for camping purposes, four acres in the meadow land bordering the river on both sides. The club to which his friend belonged desired the land for summer-outing purposes because of its beauty. The sale was made, but after the first camping season the club decided to build a clubhouse in the mountains. The meadow land was listed with a real-estate company for sale, and for a low figure it passed into the hands of a club of low standing, whose members proved noisy and addicted to revelry.

Their presence in the meadow every summer was a blot on the landscape and a source of annoyance to the farmer and his family. But the campers held the deed to their land and the revelry continued. The farmer tried to sell the remaining ninety-six acres, but could not find a buyer who would consider the price. Prospective buyers objected to the piece of land out in the center of the field, also to the people who owned it.

The case of this farmer is worthy of attention. A farmer is about the only man who can keep at a distance from uncongenial neighbors if he chooses. On general business principles it is bad policy to sell the center or even a large corner out of a farm for any purpose or for any figure very much less than the total value of the farm. If the parties who wish the land seem desirable, give them a long lease that does not grant the privilege of subletting. The smaller the piece of land to be divided the more rigidly the foregoing remarks apply. Owners of large tracts, on the other hand, can advantageously sell off slices to industrious farmers to mutual advantage. It would help to attract residents to sparsely settled districts, and aid in solving local labor problems. But no neighbors at all are better than undesirable ones.



Once there was a farmer who made money out of mining stock. He didn't buy it.

Keeping Frost From Fruit

[CONTINUED FROM PAGE 5]

protect them from rusting, and also to clean out the asphaltum residue.

Storage tanks with a capacity of 2,250 gallons can be made of No. 18 steel for about eighty dollars. Cement tanks of similar capacity can be constructed in our community for about the same price.

It is difficult to determine the amount of oil that should be kept on hand for all emergencies. Professor Greene of the Nebraska Experiment Station has suggested that in Nebraska three to six gallons should be provided for each heater during the season. With 100 heaters per acre, this would be 300 to 600 gallons. The writer's experience during the past two years indicates the need of 700 gallons per acre in Nevada for seasons of average severity. In 1911, a season of inexperience and extreme severity, approximately 1,400 gallons per acre were used. It seems, therefore, that 1,500 gallons per acre are amply sufficient in any State for all emergencies. The amount unused can be held over from season to season, so that no loss from overstocking can result.

Cost per Acre

INITIAL EXPENSE

100 heaters\$35.00 to \$85.00 and freight
Storage tank.... 80.00
Maximum-
Minimum
thermometer.. 4.50
Standard
thermometer.. 2.75
Alarm system .. 5.00 to 30.00

\$127.25 and up or down

MAINTENANCE

300 to 1,500 gallons of fuel
oil No. 21, @ 4c to 6c...\$18.00 to \$60.00

By the end of the second season the cost of equipment and heating should have been

fully met with a balance to spare, dependent upon the quality of the fruit.

The item of labor is dependent upon the size of the orchard and the emergency to be met. Two men with gasoline can and torch can open and light one hundred heaters in ten minutes, while one man can probably do the same work in fifteen, particularly if the heaters have been opened the previous evening. Since the temperature rarely falls more rapidly than four degrees per hour, one person unassisted can easily protect an acre of orchard at a temperature one degree above the danger point. If he begins earlier and does not attempt to economize on the oil he can care for a somewhat greater acreage.

If he uses a frost alarm he can sleep soundly until heating must begin, and if he uses heaters of large capacity he can rest at long intervals during the process of heating. Thus he can easily safeguard his energy for filling the heaters by day and doing the routine work of the farm. Where family or other help is available the problem is simplified.

It is not necessary to combat frost by fire alone. If one is planting an orchard a little planning will save him many nights of heating and much expense and weariness.

An elevated spot is much freer from frosts than the low lands, for the super-cooled air tends to form and accumulate in the depressions, where it is less subject to dissipation by air currents than on slopes.

Owing to diversity of exposure to air currents no rule can be laid down regarding the exact amount of decrease in minimum temperature to be expected with increase in elevation. The temperature has been found to vary 8 degrees in a rise of 13.5 feet and only 9.5 degrees in 250 feet, the average variation being probably not more than half of these amounts. However, the frequency of frosts decreases almost uniformly with increase in elevation.

Sometimes a severe storm causes the temperature to fall equally over both highland and lowland, and a widespread killing frost results. Such frosts, however, are few as compared with the others.

The early killing frosts can sometimes be avoided by planting the orchard on a north slope, where shading retards the development of the blossoms.

If to these precautions is added the grouping of the trees according to sensitivity to cold, only a portion of the orchard need be heated during the early frosts, and some saving of oil can be effected thereby.

"Cold snaps" do not differ from frosts except in name. They are merely temporary depressions of temperature in mid-winter as frosts are in spring. In the North they may injure the dormant fruit buds, in the far South they imperil the citrus fruits ripening on the trees.

Cold and wind are more effective in winterkilling than cold alone, probably because of the blasting effects of the wind. The fruit buds of peaches and apricots are said seldom to survive a temperature of 20° F. below zero, and in Montana pear and apple buds have been killed at 24° F. below zero, when followed by a period of high winds.

Since heating is too expensive to be generally employed to prevent winterkilling, except in the citrus belts, the selection of high lands with adequate windbreaks seems to be the only practicable solution of the problem.

A HEAVY draft horse should never be driven faster than a walk, with or without a load.

SOMETIMES it's profitable to tie cows out in places where there are no fences yet the pasture is good. Instead of getting a rope for this, get a cow-chain. They never wear out nor rot.

IF THE heifer intended for the dairy herd is trained to come right into the stable and is haltered, handled and fed as the cows are, you will experience much less difficulty with her at her first calving period. Her milk-producing capacity, also, will be greater than that of the wild, neglected, unruly heifer.

Don't Feed the Soil — Feed the Plant

In the top eight inches of average soil there is enough plant food in the form of nitrogen to last for 90 years, in phosphoric acid for 500 years and in potash for 1000 years.

And yet that very spot may prove barren. Plants have to take up their food in solution, in the "sap of the soil." All this food may be locked up so tightly by nature that the plants can't get at it fast enough for the commercial farmer, and he has to put in the same food in the soluble form of fertilizer.

Just so, a fertilizer may, by analysis, have all the necessary elements and yet not give the plant full value because these elements are not ready soluble.

Put into your ground a fertilizer that will feed not your already overstocked soil but your hungry crops with food which is available and easily absorbed.

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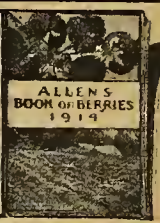


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Farm Notes

The Menace to Beekeeping

By D. C. Gilham

THE American and European foul broods are both destructive, but the American form is not so contagious as the other. However, its results to a colony once infected is the same. Both forms of disease affect the young bees in the cells.

Usually the larvæ of the American form are attacked at about the time of capping, and most of the cells containing infected larvæ are capped. As decay proceeds these cappings become sunken and perforated, and as the healthy brood emerges the comb shows the scattered cells containing larvæ which have died of disease, still capped. The most noticeable characteristic of this infection is the fact that when a stick is inserted in the larvæ which have died of the disease, and slowly removed, the broken-down tissues adhere to it, and will often stretch out several inches before breaking.

Decaying larvæ that have died of this disease have a very characteristic odor, which resembles a poor quality of glue. This disease seldom attacks drones or queen bees.

How the European Disease Works

European foul brood attacks the larvæ earlier than does the American foul brood, and a comparatively small percentage of the diseased brood is ever capped. The larvæ when first attacked show a small yellow spot on the body, near the head, and move uneasily in the cell. When death occurs they turn yellow, then brown, and finally almost black. Decaying larvæ from European foul brood do not stretch out very far in a thread when a small stick is inserted and slowly removed. The thoroughly dried larvæ form irregular scales, which are strongly adherent to the lower side wall of the cell. There is very little odor from decaying larvæ which have died of this disease, while it in turn attacks drone and queen larvæ very soon after the colony has become infected.

The financial loss to the beekeepers from these diseases amounts to one million dollars yearly. But the farmer of to-day should not get discouraged with the bees on account of disease making more care and trouble. He will receive a greater benefit from the results of his orchard and truck patch where bees are around than if none are there.

New York Cleaned It Up

Several years ago European foul brood started in the State of New York, and in a short time had almost cleaned up the bees within the State, leaving but a few weak colonies to be cared for. The beekeepers "got busy," and it took a lot of time and money to fight this great menace, but to-day they are claiming the laurels of victory with a good law on their statute books and a good force of inspectors back of it.

European foul brood in Pennsylvania during the season of 1911 so weakened the colonies that when that exceptionally cold winter followed it cleaned up seventy-five per cent. of the bees within the State. In my home yard my loss was eighty-five per cent.

To cure a colony of either form of foul brood it is necessary to remove from the bees all infected material. This is done by shaking the bees into a clean hive on clean frames with small strips of foundation, care being taken that no infected honey drops from the infected combs.

The healthy brood in the infected combs may be saved, provided there is enough to make it profitable, by piling up combs from several infected hives on one of the weakest of the diseased colonies. After a week or ten days all the brood that is worth saving will have hatched out, at which time all these combs should be removed and the colony treated.

The shaking of bees from the combs should be done during a heavy honey flow, or at a time when the other bees in the apiary will not rob and thus spread the disease.

Often the bees may be inclined to swarm out after they are shaken, and to prevent this a queen excluder should be placed at the entrance for several days.

Red Cedar Opposes Man

By Chas. A. Scott, State Forester of Kansas

RED CEDARS are by all odds the most difficult of the evergreen trees to grow from seed, and for this reason few nurserymen grow them in large numbers. The difficulty in securing the germination of the seed is due to the character of its outer covering. The fruit of the red cedar is a small dark bluish berry-like cone that contains one or two small hard-shelled seeds. The cone scales are tough and leathery and contain a considerable amount of resinous oil. These grow together and form a water-proof husk. It is this condition that makes the germination of the seed so uncertain. The seed will not grow until

moisture reaches the germ. Any method of treatment that will insure moisture getting to the kernel should accomplish the desired purpose if it does not injure the kernel mechanically. Simple as the problem of getting moisture to the kernel of the seed may seem, there are few who have really made a success of growing red cedar seedlings.

To my personal knowledge there is only one nurseryman in the United States who in recent years has claimed that he really knew how to propagate the red cedar. No one doubted his ability, for his seedling beds never seemed to lack a single plant of containing a full stand. The method used in this particular case was developed in Germany, and has been handed down from father to son for at least three generations, and is still held as a family secret. Some years ago it was my good fortune to have an opportunity of visiting probably the largest evergreen nursery in the United States. While looking over the beds of red cedar seedlings in company with the proprietor, I remarked that the secret of propagating red cedars from seed must be an "open secret."

"By the time you have tried growing red cedars for forty years you will be unable to see the openness of the secret. Some years I secure the results as you see here now, and then I may have five or more failures in succession. Red cedars are the most unsatisfactory tree I have ever tried to grow, I don't know how to treat the seed to be sure of its growing," was his reply.

The red cedar is one of the few trees that grow successfully in the treeless region between the Rocky Mountains and the Missouri River. It withstands the droughts and cold of the region without apparent injury. Because of its dense foliage it is the best tree for windbreaks that can be grown. For this reason there is a good demand through the Prairie States for cedar planting stock. This demand has led to an investigation of the methods of propagating this species from seed.

The Department of Forestry of the Kansas State Agricultural College has conducted a number of experiments to determine, if possible, some practical method of treating the seed that would insure germination. After several years' work it was found that the best results were secured by stratifying the seed as soon as gathered. While stratified it was kept in a reasonably moist condition and allowed to freeze as soon as freezing weather set in, and kept in a frozen condition throughout the winter; alternately freezing and thawing may not be objectionable, but freezing seems necessary. As soon as the frost went out of the ground in the spring the box containing the stratified seed was buried in a moist location at a depth of at least twelve or fifteen inches below the surface of the ground, where it remained until the following spring. It was then taken up and sown in beds and handled in exactly the same manner as the seeds of other conifers. This treatment gave a much higher per cent. of germination than any other method that was tried.

Stratifying the seed is merely storing it in alternate layers with sand, of sufficient depth to prevent injury by heating or by drying out. The continuous action of the frost and moisture while stratified and buried tends to disintegrate the outer covering and allows moisture to penetrate the shell to the kernel. The same processes operate under nature's method of caring for the seed. When ripe it falls to the ground and is sooner or later covered by leaves or settles into the ground.



NO LIFE can be considered complete without having had active part in the "sugar bush." The scene here shown harks the initiated back to the invigorating balmy days, crisp frosty nights, crusted snowbanks, woodsy odors, barking squirrels, flashing birds, and opening spring flowers, to say nothing of the delectable flavor of the virgin maple sweets hot from the fire.

In many minds another quite as imperishable memory will be stirred. The capacious yoked buckets and knee-deep snow brings to mind the unending days of toil and toil and sleepless nights when strained, wearied muscles knew no rest, while the long-continued "run" of sap flowed forth.—B. F. W. T.

The occurrence of seedling cedars in orchards and along rail or stone fences is accounted for by the fact that certain birds are fond of the cedar berries as an article of diet. The mechanical action that it undergoes in the digestive tract clears the seeds of their outer covering and they are cast in the voidings in a condition to be readily acted on by the soil moisture. In all probability a very large per cent. of the cedar seed that germinates under natural conditions is seed that has passed through the digestive tract of some bird.

The Man Who Had No Address

By William J. Burtscher

ABOUT three years ago I made the acquaintance of the only man I have ever met who had no address. I was attending a fair in another county and became interested in a man who said he came from the adjoining county, in which I lived myself. "What is your address?" I asked.

"I haven't any address," he replied. "How a man could live in our county, which contained the second largest city in our State, and not have an address I could not understand. We had many improved roads, and it seemed to me that the rural routes reached every corner in the county."

"The fact is," the man explained, "I don't need any. We don't take papers of any kind. We never have time to read. We never write letters either, and never get any. So what good would an address do me?"

Shortly after returning home I went into this man's neighborhood to find out something about him. His neighbors explained that he had been a renter all his life, and was just about to buy a farm. He had been very economical—almost to the point of stinginess. He never spent a cent foolishly nor saved one wisely. All his money he kept hidden away in his house. He had no confidence in banks. He had been doing this for fully twenty-five years, working hard and saving his money, with but one object in view. That was to buy a farm. And the farm he had in view was worth five thousand dollars. His goal was to wait until he had the money so he could pay cash in full the day he got the deed. Now, at last, he had the five thousand, all saved away in his house, and in a few more days would realize the dream of his life.

His neighbors said he should have put his money in the bank and had it drawing interest. The first thousand could have been helping to pay for the farm. "Why," they said, "if he had done something with that money instead of letting it lie idle in the house all these years he could have bought the farm at least a decade sooner!"

I went home, agreeing with all the neighbors had said, and hoping that now since the man had become a property owner he would come to appreciate the blessing of having an address.

A few weeks ago word came to me that this man had died. He had injured his health by hard work and exposure. He got the farm, but didn't enjoy it long.

How different it might have been if this man had had an address and received mail. By reading farm papers he would have known how to make his reared farms produce more to the acre, and while reading them he would have been resting. He would have learned how to invest his idle money in stock, or how to lend it so that it would be safe. He would have been able to buy a farm in half the time, and might have lived a half century to enjoy it. And what the man missed by not having a few friends to correspond with!

Memories of Old Times

By Clifford E. Davis

CHILDISH impressions are the strongest, and things heard or read during a child's first five years are never forgotten, be they good or bad.

My first knowledge of the outside world was hearing that the Indian Chief Sitting Bull was on the warpath, and killing settlers everywhere. I was comforted when I heard the men discussing the dispatch of General Custer after him, and I listened to them laying bets on the length of time before he would round up old Sitting Bull. Then when the news came that the brave Custer was wiped out, with all his heroic band, grief and horror were expressed on every side, and in my childish ignorance and terror I was afraid that the Indians would come East and kill all the whites. After a few tedious, fearful weeks came the welcome news of the capture of the hostiles.

When Chicago was burned I was only a scrap of humanity two years old, but several cousins and myself still remember how the smoke was so thick everywhere that we could see no distance. We listened with horror to the tales of devastation and loss, and wondered about Mrs. O'Leary's cow that kicked over the lamp that started it.

Next in importance came the nomination of General Grant for President, the cold winter when people almost froze, though clad in heavy overcoats.

In those days, in springtime, it was the usual thing to see two or three long strings of wild geese going north, while now a flock or two is a rarity.

In those early days we knew only brown sugar. White sugar was almost unknown, and the other kind was ten cents per pound. The best sugar-cured shoulders of bacon were nine cents per pound, wheat was fifty cents per bushel, and corn less than that.

To look back and compare America to-day with that past time, when crime was little known and swiftly punished, is to see a vast change. In the geographies in use then, Indiana and the West were as foreign as Panama is to-day, and our series held a picture of a prairie fire, with settlers and animals fleeing from the destroyer through grass ten feet high, but uselessly.

The world does move, but there was a charm in those crude old times when any rough convenience was a luxury and a newspaper a joy.

How "We Made the Break"

By Roland W. Day

I WAS born and brought up in the city and was never on a farm in my life until a few years ago, when I made the happiest break in my life.

My father was a builder in the city, and under his supervision I learned the brick-mason's trade. I served four years' apprenticeship, and at the end of that time I had learned the trade and went away from home to make a living for myself. I was then nineteen years of age. I worked two years at my trade, and every evening I was out to a dance, or theater, or card party, or supper, etc. One day I got to thinking how foolish it all was to throw my life away like that and not a cent to show for my hard work.

When I became twenty-one I was married, and although that changed things there were many other things and ways for the money to get away. House rent, electric light, telephone, carfare twice a day, grocery bills, and another one to clothe.

The following winter was a very bad one, snow and freezing weather from November until March, and I never did a day's work. One day I met a friend who was going out to take up a homestead, and I told him to come out to the house and we would all talk it over, and maybe we would go out with him. So that evening the four of us laughed and talked it over, and we decided that we would like to go out and try it anyway, especially for my wife's sake, as she wasn't very well.

Plenty of Land but No Money

So we went out and looked over the land and came back and filed on one hundred and sixty acres of homestead land in the north-eastern part of Colorado. This was the first of April, 1909. We hadn't much money to buy teams and farm implements and put improvements on the place, so we decided that we would stay in the city and I could work for six months before we moved upon the land.

I hired twenty acres fenced, broke, and planted to corn, and in July I and two other men went out for a week and put up a stone house, two rooms, 12x24 feet in all. The stone was on the place. Then I came back to the city and worked on until the first of September, and then we moved out. I bought a horse and wagon and a friend of mine had an old mare he said I could have if I would give him the first colt.

I built a barn and a cistern as soon as we arrived, and then it was time to take care of my crop of corn, which turned out very good for dry farming. I cut it by hand while my wife did the shocking. In this way we harvested our first crop. It gave us

the corn for our team and some to sell, besides seed and the fodder for hay.

During the winter I sold enough corn to buy a walking plow and harrow, and fenced our land and did a little brickwork around the country, building chimneys, foundations, etc., whatever I could get to do.

In the spring when it was time to start to plow I stuck a few sticks in the ground here and there to make my first furrows as straight as possible, and did the best I could. Some of our neighbors complimented me on it, so I felt very proud. I rented a cornplanter for ten cents per acre and put the twenty acres again in corn, milo, cane, and Kafir corn. I also planted a small garden, and I planted a lot of watermelons, pumpkins, and squash in the corn.

That fall I had another fair crop, but not so good as before; and after it was harvested I bought a milch cow and a calf and another horse. During the summer at slack times I worked some; I once made a trip into the city and worked three weeks.

During the early part of the winter I had a well-drilling outfit come to my place to try for water, as now it was getting too much of a job to haul water for my stock. They went forty feet in their first hole and lost it, and in the second went one hundred and fifty-five feet and failed to get water, so I had them stop, as I had to pay one dollar a foot.

We Were Blue, Awful Blue

Well, I can tell you that evening my wife and myself felt pretty blue as we talked it over. We decided we would sell off our stock and go back to the city.

We wrote letters to our friends telling them of our misfortune, and in about a week we received a letter from a relative of one of my wife's friends, saying that he owned a hundred and twenty acre farm and wanted to go to California for two years, and if I cared to farm it he would furnish all implements and horses and take one third of the grain and one half the alfalfa hay. So in February, 1911, I went and took hold of the new farm, eighty acres of grain land and forty acres of hay. We did not have enough money to commute our homestead, so borrowed enough on it to do so, in order that we would not lose it and have it revert to the Government.

By the time I had the eighty acres plowed it was too late for spring wheat, so I planted the whole thing to oats. I knew nothing about irrigating, so hired a man for the summer, and he helped me a great deal. In the fall we harvested from the eighty acres of oats fifty bushels of grain per acre, a total of 4,000 bushels. Three cuttings of alfalfa hay from the forty acres, a total of one hundred and sixty tons. I sold 1,800 bushels of oats at 35 cents, total \$630; and 60 tons of hay at \$9, total \$540, making a total of \$1,170 for my year's work besides giving the owner his rent. I then paid off our mortgage on the homestead and had a little in the bank, besides buying two more cows and a few pigs.

The next year, 1912, I farmed the same place, and rented forty acres joining the one I already had; put this into fall wheat, the other eighty acres I planted to oats, spring wheat, and barley. During the summer I kept two men steady, and harvested a total of 4,500 bushels of different grains, besides 140 tons of hay. Barley wasn't worth much that year, and FARM AND FIRE-SIDE had lots in about hogs, alfalfa, and barley. So I bought twenty young pigs, fenced in five acres of alfalfa, and did not cut the third cutting but let the pigs run on it and gave them just enough barley that they would clean up after the alfalfa was eaten off. I gave them all the grain they would eat, and the following March they weighed 300 pounds apiece. I made good money. From the earnings, or rather part of it that year, I bought four large draft mares, all with foal.

The Gas Tractor Worked for Us

In December the owner came back from California and said he would farm the place for 1913, but that he had recommended me to an irrigation company that had a lot of land to rent. I went to see them and rented the place that I am on now. I have a five-year lease on it. It consists of 400 acres of grain land, 85 acres of alfalfa hay, all for the same rent as the other place.

I was unable to handle the spring work this year alone with teams, so had a gasoline engine plow most of the land, bought two four-horse grain drills, borrowed some money on my mares to buy an extra team of mares, and followed the plow. The plowing cost me one dollar per acre.

This past fall I harvested 12,000 bushels of oats and wheat and 250 tons of fine alfalfa hay. I sold most of my wheat direct from the threshing machine, but stored most of my oats as FARM AND FIRE-SIDE advised me to do, for which I am very thankful, as I am now selling my oats at 48 cents a bushel.

Last month there was a sale near here and I bought twenty head of Durham two-year-old heifers that will be fresh in the spring.

Last fall I put in 150 acres of fall wheat, and at the time I am writing this it is covered with two feet of snow.

E-W

What would I be doing if I were in the city working at my trade to-day with two feet of snow on the level? Sitting by the fire just the same as I am doing now, only I am making dollars to-day where there I would be spending them. Would my wife go back to the city and live? Well, I think this is answer enough. Why should we, when we are happier than we ever were before and are both young and have the best part of our lives yet before us.

This same opportunity is awaiting all such young men and women who are not afraid to get out and work and take advantage of a helping hand when it is offered and work on a little borrowed capital so long as they can see their way clear.

I take four of the leading farm papers, among them FARM AND FIRE-SIDE, and I let them do lots of my head work. I am also in on the regular list of monthly bulletins from Washington, and sit up many a night until midnight trying to work out some scheme for the coming year.

I have invested my money in nothing that would not make money for me. This year my mares brought me colts, next spring my twenty head of grade Durhams, bred to a registered bull of the same, will be fresh and make me quite a herd, and if anyone can show me where, by honest toil, five years' life in the city will put the money in the bank to buy the stock that I have around me, and the grain in my bins, and give the freedom that a man and his family can get out of hard work for himself on the farm, I want to know about it. And I have as good a paying trade as there is in the average line of work.

There is one point that I must say, that I can stop my team in the field, or any other place, and light my pipe, and I never could do that working for a boss in the city.

There is one great thing that my wife and I are aiming for now, more than anything else, and that is, that when our five-year lease is up on this farm we shall be able to move upon our own.

The Farmer and the Woman

By Ramsey Benson



A FARMER brought in six hens to sell. "I keep a boarding house," said a Woman, "and I wish you would pick me out the three toughest of these hens."

But the Farmer had taken the short course at the Agricultural College and knew a thing or two. He picked out the three tenderest hens.

"Very well, you may keep them; I will take the others!" cackled the Woman. Knowledge is power.

Experience Praises the Silo

By C. Bolles

A NEBRASKA neighbor of mine read about a flooring-board silo, and decided he too would make one. The six-inch flooring boards cost him \$38. Other expenses, including labor, added not over twelve dollars more. This built a 12x20-foot silo. If I remember rightly, he worked a day and a half on the silo himself and had a neighbor help another day. One advantage of such a silo is that after a year's usage it can be taken down and the boards used for other purposes. Notwithstanding this advantage this farmer figures the silo will pay for itself in the one season.

Three farmers living in another locality were able to dig a 11x25-foot silo apiece by exchanging work. By so doing the cash outlay for each was the price of eight sacks of cement—five sacks used at digging time, and three the second season. There was some ensilage spoilt around the edges the first season, but after the second plastering the ensilage kept well. The one whom we visited used ensilage for feeding both horses and cattle. The horses were fed Kafir fodder as a supplement to the ensilage. Although they are not fattening on the ration, nevertheless the horses are keeping in good shape while doing some work. The cattle are fed wheat straw through the day and given ensilage night and morning. This class of feed produces as much milk, we were told, as does green (buffalo) grass. Since these are the only farmers using silos in that neighborhood, the three have to shift for themselves in the matter of getting the fodder into the pit. This is taken care of by using an old horsepower and a \$110 cutter. This outfit works well.

Another neighbor dug a 14x34-foot silo at an outlay of \$32. This silo required eighteen sacks of cement. On account of unforeseen difficulties the corn and Kafir fodder with which it was to be filled laid in the shock for a month before the filling took place. Even this ensilage was eaten with more relish and much less waste than either dry Kafir or corn fodder. Ten acres of corn making twenty bushels to the acre and an acre of Kafir yielding five tons per acre filled the silo. By starting in a saving

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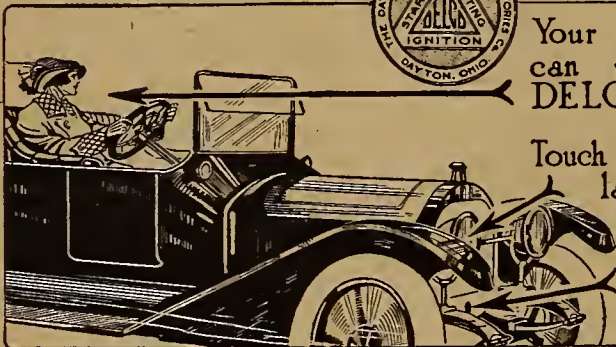
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way and gradually increasing the ration of ensilage, eighteen head of cattle were fed from some time in November until grass, and the cows until early June, and still there was some ensilage left. The cows were fed no longer because they didn't use enough to keep it from spoiling in the silo. Kafir fodder was used as a supplement to the ensilage until grass came. The cows gained fully a half on their milk over the amount they did give on a diet of Kafir fodder and pasture.

Pit Silos are Cheap

It took six men four days to dig and plaster a 12x30-foot silo. Here the refuse dirt was hoisted in a trap-bottomed bucket by means of a cable stacker. Instead of dumping the dirt near the pit it was hauled away in wagons. The owner figures his silo cost him \$50. Just to show he really believed in the utility of a silo we might add that he had to haul his sand for plastering nine miles. Again, after using this one year he is contemplating the building of another 12x30-foot underground silo.

Still another farmer dug a 14x20-foot pit silo at an outlay of \$40. This man fed fourth-cutting alfalfa and ensilage to his milch cows. He found that if the ensilage is withheld even one meal the loss is noticeable at the next milking. It is his observation that a ton of ensilage and a ton of alfalfa are worth from a feeding standpoint two tons of alfalfa. Outside of fodder it costs him 67 cents a ton to fill his silo. Where he has to buy the corn in the field the cost will reach two dollars a ton. In this case it took between three and four acres to fill the silo. Some may think it a tedious task to get the ensilage out of a pit silo. This is avoided by using a cable stacker and a bucket or box that may or may not have a trap bottom. Others have avoided the hard work part of getting ensilage to the level of the ground by using a swinging stacker and a bucket or box. One farmer using this method hoisted a ton of ensilage and put it on the wagon in twenty minutes. I have visited several pit silos where the only means of raising the ensilage was by the way of the tub and ladder route. This is sure of course, but rather slow.

Perhaps one of the most striking examples illustrating the value of ensilage is the following: A stockman living some distance away had 105 calves that he had wintered on cut alfalfa and ensilage. Of this number 35 were placed on good pasture in the spring, while the remainder were kept in a tight corral and fed all the ensilage and alfalfa they'd eat. Early in August these calves were started on grain and on a full feed of corn in the fall. It wasn't possible to weigh all the calves in either lot. However, one of the calves in the bunch that was fed right along made a gain of almost seven hundred pounds from some time in December to the first of November. This calf, too, was no better than the average. In the opinion of the stockman those calves out on pasture did not pay for their keep.

Rural Daily News

By James A. King

THERE is no danger of the telephone displacing the newspaper. Yet in some things, especially in the rural communities, it is doing the work of the daily paper. Practically all country phones served from an exchange are on party lines. This fact has made it possible for our local exchange to become a thing of great importance to the community which it serves. Its service is much greater than that of simply making it possible for one subscriber to talk to another when they wish to do so.

One real long ring on any of these party lines means that every subscriber on that line is called to the phone. Always one of the women or one of the children of a family is in the house. When the long call is heard someone goes to the phone and takes down the receiver and listens. This makes it possible for the central operator, or any party on the line, to talk to all the subscribers on that line. In this way the rural phone may be used to give the most important news of the day. Each one who listens in answer to the long call passes the news on to the other members of the family, and to those neighbors who do not have a phone, when they see them.

Each day at about the noon hour the long call is sounded on our line. The operator allows a reasonable length of time for someone to come to each phone. She then gives the weather report, repeating it the second time. Then she gives the correct time of the day, repeating that. I know of other phone exchanges which also give the local market reports on hay, grain, and live stock. Ours does not do that, but it does have a general news feature that is unusual. They announce public functions of all kinds. Auction sales, funerals, church sociables, meetings of the Ladies' Aid and kindred societies, are announced regularly on the "long call."

One of the most helpful features of the long call is where public aid is needed. If an animal is strayed or stolen, or a child is lost, the long call asks every one over a wide territory to aid in the finding. Often in cases of country fires the long call has

Farm and Fireside, March 14, 1914

brought quick aid from all directions, and much loss of property has been prevented. Otherwise the victim would probably have been helpless.

The long call is one of the most potent factors that has come into farm life in this generation. It has done more than any other one thing to remove from our farm life that feeling of isolation, the greatest of all drawbacks to living on a farm. To the men-folk it means much in a business way through those two little items, the weather and the market reports. To the women-folks it probably means the most of all. To them it gives a feeling of security and companionship, and the pleasing sensation of being in touch with the daily plans and activities of the entire community. And of no mean general importance is that "community feeling" to which it gave birth and to which it is daily giving increased strength and life.

The Best Ear of Corn



CORN-SHOW awards and field yields may coincide, but again they may not. The pictures here point to the latter case. Ear 68 would easily win on the show table. Note on ear 66 the poorly formed butt and tip, the crooked rows, the rounded kernels with wide space between them, and note how small the germ of the kernel is. And yet in actual field test (kernels from each ear having been planted in individual rows), ear 66 yielded 20 bushels to the acre more than ear 68. Is there a moral to this? If there is it is that corn shows can be trusted to tell about the physical characteristics of the ear, but when we want to know about the yielding power of the ear we must ask that question of the ear itself.



OVER 12,000,000 gallons of gasoline were produced last year in the United States from natural gas. About 390 cubic feet of gas are required on an average to make one gallon of gasoline.

TREES are winter-killed, not by the cold but by the drying of the tops when the soil is so frozen that the trees cannot take up water. That is why a straw mulch prevents winterkilling, and also a deep snow falling before the ground is frozen. A close, heavy mulch may cause "mulch blight"—a disease in which the tops die while the trees are mulched, and then the roots.

E.J.W



A NATION-WIDE campaign for the eradication of hog cholera, financed by the federal and state governments in co-operation, but under the general direction of national authority, has been brought plainly in sight by the Congressional action on the Kenyon-Pomerene measures aimed at this purpose.

Hog cholera is a big national problem—one that touches the meat supply of the nation, the cost of living, and the economic posture of the whole farming community. Estimates of the annual loss by hog cholera are so varied and represent so many points of view that they mean little. The Department of Agriculture puts it at \$75,000,000 of direct loss, but that is necessarily only a part of the actual damage done. If that many hogs die of cholera in a given year there will be fewer hogs in succeeding years; partly because many farmers become discouraged after losing their hogs and quit raising them for a time; partly because there will not be hogs from which to breed.

But this is only a narrow view. The hog is a sort of by-product of the production of beef. Men who raise meat animals on business principles, in the corn country, figure that if they come out even on the steers the hogs that "follow the steers" will earn a profit on the whole transaction. The two necessarily go together in the best meat-manufacturing process. If cholera kills the hogs, or the fear of it keeps farmers from raising hogs, then the steer-and-hog combination is smashed and there will be disposition to get out of meat-raising entirely. This is regarded by the authorities as one of the gravest aspects of the whole situation. Hog cholera is only a less menace to our beef-growing industry than to the production of pork.

An Insignificant Sum!

THE last Congress appropriated \$75,000 for demonstration of hog-cholera treatment with serum and vaccine. By the time the money was available—July 1st last—cholera was epidemic in many parts of the country, and unusually virulent. The amount was so small that, spread over the country's needs, it would have looked like a postage stamp on a pasture lot. So the Department concentrated its work in Pettis County, Missouri, Dallas County, Iowa, and Montgomery County, Illinois, in all of which conditions were very bad. The wonderful results of the serum treatment cannot be better emphasized than by reproducing some paragraphs from Senator Kenyon's recent speech in the Senate. He gave his facts from Department records:

They experimented on the healthy hogs the two treatments, the serum alone, and the double or simultaneous treatment, which is different from the serum treatment only in that the actual blood of the diseased hog is also injected into the hog under treatment, as well as the serum. That is dangerous and can be done only by experts.

In Pettis County, Missouri, the number of healthy hogs experimented on with serum alone was 3,825. Of these six died, probably the natural result. In Montgomery County 943 were experimented on, of which 33 died. In Dallas County none were experimented on in this way.

With the double treatment, in Pettis County they experimented on 500, and there were no losses; in Dallas County on 2,760, with no losses; in Montgomery County on 3,711, with 36 losses. Out of a total of 6,971 there were 36 losses, or one half of one per cent.

As to diseased herds they experimented in Pettis County with serum alone on 3,801 hogs, of which 597 died. That was even after the hogs were diseased, but not, I take it, to a very great extent. In Montgomery County they experimented on 2,797, of which 610 died. In Dallas County they experimented on 4,959, of which 1,693 died. Out of 11,557 diseased hogs 2,910 died with the serum treatment alone; and with the double treatment, out of 7,026 hogs experimented with, there were 204 lost—less than 2.8 per cent.

Doctor Stange, in charge of the State Biological Laboratory at Ames, Iowa, sent me a statement as to their treatment, showing, first, the number treated with serum alone—the well and the sick—and then the numbers given the simultaneous treatment.

The total number of hogs treated in healthy herds was 1,887; number lost, 44. The total number treated in diseased herds was 3,680; total number lost, 758. Of these, 986 were already actually sick when they were treated. The loss was 16 1/4 per cent., while the general run of losses in herds where cholera had entered has been from 60 to 85 per cent. So the practical result of the treatment in our part of the country has been to reduce the losses from 60-85 per cent. down to 16 1/4 per cent.—that, even when the herds were actually sick when treated. It was reduced to 2 1/3 per cent. where the hogs were treated before becoming sick.

Senator Kenyon has conducted an extended correspondence with farmers, state experiment officers, makers of serum, agricultural societies, and many other instrumentalities concerned with this problem. The measure which he is urging provides for sending agents and instructors into the various States to

The Nation Strikes at Hog Cholera

By Judson C. Welliver

show the farmers how to deal with the disease; to investigate the best serums; and to devise and inaugurate a plan by which the necessary serum can be secured from the Government at cost.

Whether the Government ought to go into the actual manufacture of the serum is the subject of sharp controversy. I think the decided preponderance of opinion opposes it, yet Mr. Haugen of Iowa, who was chairman of the Committee on Agriculture for a long time before the Democrats came into power, strongly

stability into the business, so as to insure, on one hand, an adequate supply of serum when the necessity for it arises, and to make certain that the prices will be reasonable.

In reporting a bill to appropriate \$500,000 for the Federal Government's part in this anti-cholera campaign, the House Committee on Agriculture declares that the whole question of the national meat supply is involved. Hog production must increase or hog meat will not go round. Right now an alarming decrease in the country's supply of hogs is taking place. However, the smaller number of hogs enumerated in the United States in 1914 are set down as worth \$612,000,000, while the larger number of a year ago were worth only \$603,000,000. As to the possibility of eradicating the disease the committee, after taking much testimony and studying the results of the work in the three experimental counties, made this statement:

The results incline the committee to the belief that hog cholera can be reduced, controlled, and substantially eradicated from the country by a reasonable expenditure of money during a reasonable period of time. And with this belief in mind the committee does not hesitate to recommend this appropriation, which it believes will be a highly profitable investment rather than a mere expenditure of public money. However, the committee is convinced that the very bigness of the undertaking will necessitate the vigorous joint action of federal, state, and local agencies to deal with it effectively. The problem is too large for either state or federal authority alone to handle it. It requires joint and united effort of these agencies, one of the large factors being the education of the people and the demonstration to them of the value of the serum and virus. The Federal Government, however, on account of the interstate traffic in hogs and hog products, is most intimately interested, and has a most clear duty in the premises. The directing influence of the Department of Agriculture in this problem, which involves all the States, is essential if a nation-wide plan of hog-cholera eradication is to be undertaken successfully.

An Enormous Loss!

FOR the year 1913 the committee estimated the number and value of hogs lost through cholera, State by State. New England, with New York, New Jersey, and Pennsylvania, lost 81,403 hogs, worth \$1,030,000. The group comprising Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida lost 625,275 hogs, worth \$4,517,000. The group comprising Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas lost 2,350,197 hogs, worth \$25,505,000. The group including Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas lost 1,180,324 hogs, worth \$8,539,000. The rest of the country, grouped together, lost 82,734, worth \$829,000. For the entire country the year's loss is stated at 5,730,844 hogs, worth the enormous total of \$54,982,000. These figures are decidedly conservative.

The cholera conditions of 1913, and of 1914 down to this date, are so generally bad that it seems justifiable to say that they are worse than the country has ever known before. The truth is that unless vigorous defensive measures are enforced there is danger of a national calamity comparable to the disasters that in ancient times caused famines.

The \$500,000 which will be provided this year by the Federal Government will be multiplied by ten, if need be, in coming years; for this fight once undertaken will not be dropped. The Government has expended millions in the fight on the boll weevil in the South, and now it is going to turn attention to the cholera scourge which covers the entire land. How Congress feels about the situation may be guessed from the observation that when the Kenyon Bill came to a vote in the Senate there was no demand for a roll call, and only one Senator had expressed opinions that aligned him against it. That one was Senator Works of California.

The progress of this campaign will depend largely on the interest the farmers and the state governments take in it. The Federal Government cannot carry the whole burden, and ought not to. The state legislatures this winter ought to pass measures looking to co-operation with the national authorities; and in a number of them measures have been introduced for this purpose.

The average farmer can make himself a force in this situation if he will right now give attention to the situation in his state legislature. The Congressional end is safe enough for this year; but your member of the legislature ought to get a letter from you, insisting that the State take its part of this responsibility, and give evidence that it appreciates the efforts of the National Government.

A letter to your legislative delegation, and another to your Congressman, will help. Next year we want to get this half million at least doubled. Now is the time to begin on that.



Let your state legislature know your needs

favours government manufacture. It is urged that there are many fake serums in the market, and that it is impossible for the farmer to know whether he gets good or bad. Senator Kenyon has undertaken to meet this objection by introducing a separate bill for inspection and control of the manufacture of serum in private concerns.

There are a large number of private manufacturers of serum throughout the country. They have equipment ready for business, and are established. If the Government should start into the business of manufacturing serum it would be a long time getting ready to supply the demand; and meanwhile the private producers would be indisposed to expand their operations, or to stay in business during times of small demand, because they would figure that the Government would presently oust them out of business anyhow. During this interval, then, calamity might happen; the Government would not be ready to provide serum, and the private makers would be turning out a hopelessly inadequate amount.

Place the Business Under Strict Regulation

CONGRESS, at any rate, thinks it better to keep the private producers in business, but under strict regulation; and this is well-nigh certain to be the conclusion. It is desired, however, to get the business so organized that serum may be provided at cost, or very near it. Under present conditions, when farmers get thoroughly convinced that the serum will help them, and then cholera breaks out near them, they are ready to pay outrageously high prices for serum they must have. Wherever the Government, for instance, has conducted such demonstration work as was described in the excerpt from Senator Kenyon's speech, there the farmers will be found thoroughly satisfied that serum and salvation are pretty nearly synonymous; and throughout that region will be rich pickings for the makers of serum. It is hoped to introduce elements of

STIRRING UP ANN

A Village-Improvement Story of an Old Maid Saved From Her Fate

By Nina Purdy MacDonald

Illustrated by Raymond Thayer

I HAD just finished doing my dinner dishes when I looked out of the window and saw the Higginses' gray horse coming up the road on a good, swift trot. Mandy was driving. She sat well forward on the wagon seat, a rigid figure, with her arms straight out high above her lap, holding the reins tightly. Her hat was a little on one side, and stray rings of hair hung carelessly around her face. I saw from these signs that she must have some mighty important plan in her head.

When I came to live in Gregory Hollow a few years before, I thought I was going to bury myself alive. I had always lived in a large town. Then my aunt died and left my uncle alone in his old age, with a large farm to manage. As my husband was dead and my son married, I decided it was my duty to take care of my uncle and to put up with the loneliness and narrowness of the back-country life for his sake. But that was before I knew Mandy Higgins, and before I knew about the Neighborhood Improvement Society.

Gregory Hollow is a little creek valley nestled between two ranges of the Catskills. In it there are some twenty-odd farms with their meadow lands in the valley and their pastures running far back into the hills. The head of the hollow is about six miles from its foot, where there is a little village which is the center of trade and amusement for all the surrounding hollows.

Mandy Higgins was the wife of a well-to-do farmer. She lived pretty well down to the foot of the hollow. She was the president of the Neighborhood Improvement Society, which she had organized with the purpose of making things better for women. I hadn't lived there long before I decided that life everywhere is the same; its main object is to keep toward a higher standard, to set a higher standard for folks and to help them live up to it. So, instead of sitting back and mourning because I wasn't in the swim and jostle of a large town life, I joined the Neighborhood Improvement Society and aimed to help Mandy Higgins in her work in that hollow.

My uncle took her horse, which was streaked with perspiration, and Mandy came hurrying into the house, her eyes shining and her manner eager.

"Well," said I, smiling, as I got a chair for her and sat down with some berries to hull, "whom are you going to improve this time?"

Sue took one of my aprons from its nail behind the door and began to help me hull.

"I am going to keep Ann Simmons from being an old maid," she said quickly; then she began to laugh as she saw the surprised expression on my face.

Ann Simmons lived two miles farther up the hollow from me. About two years ago her father and mother had died within three weeks of each other. Ann, being the youngest of the family, had spent her forty-odd years of life taking care of her parents, mothering them and humoring their whims. And now, since they had gone, she had nothing to do but tend her cats and dogs and chickens, and her home. She lived in a spotless little house, all white save for its dark green blinds. The inside of the house was painted white too. Ann had her own paint brushes and cans of paint, and as soon as a spot got the least speck dirty she would paint it over. She had always been a careful housekeeper, and since her folks had died she tended her house as if it was a live thing. Since she had a comfortable income she had no financial worries. Her brothers had tried to get her to live around among them for a while. But she decided that everything about the house would go to rack and ruin without her, and that she was better off in her own home. Her trouble had sort of soured her. She wouldn't visit among her neighbors; she stopped going to church; and, what hurt us women most of all, she wouldn't join our Improvement Society.

When Mandy said she was going to keep Ann from being an old maid I snorted.

"Where do you suppose you will find a man for her?" I asked. "You know she has never looked at one, and that she is not the taking kind among them. You had—"

"Wait," Mandy's tone was commanding and I stopped. She went on: "Ann doesn't have to have a man in order not to be an old maid. Lots of women to-day aren't married and never will be, but you can't call them old maids. That's because they have real interests in life and real things to do. It's because they keep up with the times and what is being done around them. A single woman doesn't have to be an old maid. Lots of married women who haven't much to think of except their own little ways and whims get to be the old-maid kind too."

"Well," I said, "Ann has had enough to do with caring for old folks and running the place. She needs a rest."

"Yes," Mandy agreed, "she has had enough to do; that isn't it. It's what she hasn't got to do now. She keeps herself shut in at home, eats, works, knits, and cleans up her house, all at a set time every day. And look at the difference two years have made in her. She has got into a rut and needs stirring up."

"Do you mean to stir her up by getting her to join our Improvement Society?" I asked.

"No, we aren't designing; but if the plan works she will join."

"Well, what is the plan?" I inquired, getting curious. Mandy shook her head thoughtfully. "It isn't a sure-working one yet," she admitted, "but I am going to write a letter to my boy, David, and see what can be done." Then she lowered her voice. "Is there anyone around?—because it is delicate in its nature, and I am not going to let anyone into it except you and David. I have to get David to help."



"Great Everlasting!" she exclaimed

Her son, David, was a doctor in a neighboring city. Mandy went on, "We can't trust all the members of the Improvement Society to keep it a secret."

I made sure that my uncle and the hired man were out of bearing, and shut the outside door. Then she told me.

"Seems to me we shall be tackling a pretty ticklish problem," I said, thoughtfully, after she had finished; but all the time I was eager to get at it. "It will take a lot of careful managing. Do you s'pose we are equal to it?"

Mandy smiled confidently. "Don't you worry. There is something inside of us women that makes us understand in a minute how to do things that a man has to ponder on and then usually blunders over."

"I want to write the letter to David here," she said, "for I don't want his father to suspect a word about it. You know John is always teasing me about my Improvement business, and he might say something about this before folks. You never can tell what a man will do. Besides, he would be mighty curious; and the fewer who know this plan the better it will be."

I agreed, and got her a pen and ink and some paper. When she had finished she let me read the letter, and I decided that she had hit upon just the right plan to take Ann out of her rut. She left the letter with me to mail, as I had to go to town in the morning to do some trading.

After she had gone I sat thinking over what she had written about Ann being a motherless woman and not having anything to mother now except some animals and a little white house. And one line of her letter stood out, the one where she said that the cause of many of life's troubles is that lots of mothers are not mothering women and lots of mothering women are not mothers. Poor Ann was getting into a narrow way of living just because she didn't have anything worth while to mother. When I thought how Mandy, a mothering woman, was undertaking to help Ann, I remembered the old saying that God had made mothers because He couldn't be everywhere Himself, and I rejoiced in it.

Next morning I took the letter down to the post-office when I went to do my trading. Mandy called me up on the telephone before I started, so as to make sure I wouldn't forget to mail it.

I stopped at her place a few minutes on my way home. When I got near the house I could hear her singing, high and strong and sweet, going from one song to another as she went from one piece of work to another. She met me at the door. Her face was flushed and there was flour on her arms and nose, and I knew that her mind wasn't on her housework but on improving Ann, and that she was endeavoring to control her excitement until she could hear from David. "When do you s'pose we shall hear?" she said to me.

"Like as not in two or three days, or it may be a week or two," I answered truthfully; then, as I saw her face fall, I suggested, "Why can't you and I do some sewing or something while we are waiting?"

Her face brightened. "Can you go to town with me this afternoon? We'll pick out some stuff to sew on, and to-morrow we will make something for Ann's improvement," she laughed happily at the thought.

The next day she came up to sew with me. We worked until late in the afternoon. We talked low and quietly when we handled the soft, pretty things, and I felt as I think a man must when he takes off his hat at a Decoration Day service. It seemed there was something sacred in the shade-drawn parlor with the dainty sewing, speaking of improving and loving, and we earnest-working women trying to make things better, and doing that trying, not in a man's way, as so many like to think women's aim is, but in a woman's.

As we came out of the parlor the telephone rang. It was Mandy's ring. Knowing there wasn't anyone in her house she answered it. It was the station agent, and he had a telegram for her. It read: "All O. K. 10:30 to-night. D. H."

It happened fortunately that it was lodge night, and both John and my uncle were going. The hired men were going to a dance.

Mandy went home and got supper for the men. Then, after they had all gone, she hitched up the horse and drove up to my house. We took a short cut over the hills to the milk station. David got off the ten-thirty train, and since my house was nearer Ann's we drove back there.

As soon as we got inside and I had shut the door Mandy opened the basket David had been carrying. In it was a fat, red, wrinkled boy, sleeping contentedly in his cotton-lined nest.

David explained that it was only three weeks old, and that its mother, who was a waif of the streets, had died in the hospital that morning. He had made inquiries, but there was none to claim the baby. And when he received his mother's letter he decided that he had Ann's improvement all ready.

"But what if she won't take it, Mother?" he asked anxiously.

Mandy, who was fondling the baby's fat, pink toes, looked up confidently. "She will, David; she just can't help it."

Mandy folded the little clothes which we had made and put them into the basket beside the baby, and I wrote a note in fancy writing and pinned it to the little blanket. It read: "I know you are a good woman. Please care for my baby as your own, for I cannot, and I have no people with whom I can leave him."

We were going up to Ann's with it then, but Mandy stopped long enough to put in a bottle that used to be David's.

"Probably Ann won't have any in the house," she explained, smiling.

Finally we started. David left us when we got about halfway, and went cross-lots over the hill to the station. We drove up under the trees below the house, and Mandy stole up to the porch quietly and carefully with the basket while I held the horse. She set it down just outside the door. Then she came back to the wagon, and we waited.

We could look through the windows into Ann's kitchen. The nickel of the range and the teakettle gleamed white in the lamplight, the table oilcloth shone like a mirror, and even more shone the glossy whiteness of the woodwork. Ann came out into the kitchen from the dining-room and got her spectacles from off the clock shelf. She put them on and went around the room looking long and closely at the paint. When she got to the board above the sink she shook her head, then went out into the woodshed. In a few minutes she came back with some paint brushes which she put into some turpentine to soften, and we knew what she intended to do the first thing in the morning.

In about twenty minutes the baby began to cry—a little, tiny cry at first, then loudly and lustily. Ann came to the door and leaned forward, peering out into the darkness. Then the baby gave a louder yell. She jumped back. "Great Everlasting!" she exclaimed, caught up the basket and ran to the light. Mandy and I waited to stay longer, but the horse began to paw and snort, and we didn't dare. So we hustled off.

Next morning I was doing my breakfast dishes when Tim Gray, a lad that draws the milk for the farmers living in the head of the hollow, stopped his team in front of the house and began to call. I hurried out to see what he wanted. He told me that Ann Simmons had come running out to the wagon when he was driving past her place. She wanted him to stop and tell me to be ready to come up to her house with Mandy. People always sent for Mandy when they were in trouble or when anything unusual happened, and since I had been so intimate with her they had been sending for me too. Tim said that Ann did not seem like herself—she talked so fast, and her hair wasn't combed.

I hurried to get my work done and was ready by the time Mandy stopped for me. When we drove up in front of Ann's house she came running out on to the porch to meet us. She looked more like the capable, loving Ann who used to care for the old mother and father. Her hair, instead of being slicked down close to her head, was put up carelessly. Her dress was turned down at the throat, and her sleeves were rolled up above her elbows.

"Mandy," she said, half crying, "Mandy, someone has sent me a baby."

"A baby!" Mandy exclaimed, in a surprised tone. "Who—what do you mean?"

We went into the house then. There in the old-fashioned cradle in which all the little Simmons had been rocked lay the baby, tucked in under a little piecework quilt, hliking and cooing.

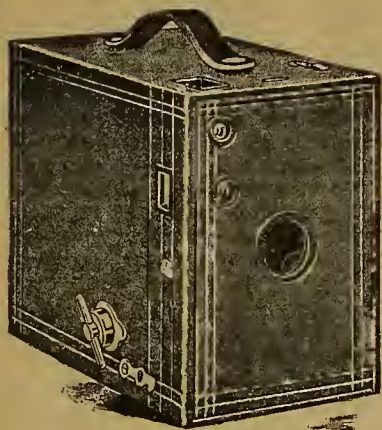
"Who sent it, Ann?" I asked.

"I don't know, Jule. Here's the note that was in the basket." She handed it to me and began telling me how she heard the baby cry the night before.

"But—" and as I listened I knew for a certainty that Mandy was right when [CONTINUED ON PAGE 31]

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Messengers of Grace—By Richard Braunstein



THE other day I was reading again how Abraham, returning from battle, was met by Melchizedek. This old Bible story is beautiful and rich in suggestion. It is permitted us to find a fresh revelation and a new inspiration every time we read how the high priest crossed the path of Abraham and blessed him.

A recent writer says: "Abraham's heart must have been hard on that day. He was returning from battle. His blood was hot within him. Butchery tends to make men butchers. He was in danger of returning home unsweetened and uncooled. But picture this gracious figure of Melchizedek, crossing his path, a reminder of brotherhood and heaven, waiting to bestow a blessing. After Abraham had received the benediction he was a different man. A sort of melody had driven out the din of strife. Upon his life there lingered a certain sanctity and peace. A perfect flood of day had broken through the clouds. His bitterness was gone—all because a gracious soul had met him on the way."

Such meetings on the path of our life are good. Our tendency is to become professional. We forget to unclinch our fists. We become so used to driving bargains and doing battle for daily bread that we scarcely know how to stop. "We come back," says a modern preacher, "from life's firing line to wear the fighting face." We need some influence, some agency, to cross our paths to bless us, to soften us, to cool us, and to bring out the best that is in us. We need some Melchizedek to come between us and the eternal grind of things, to bring a refining influence upon our lives and keep us from becoming altogether pagans.

There are such harmonies if we stop to listen for them. There are such blessings if our eyes are trained to seek them. For instance, the companionship of books. There is nothing so powerful as a good book to keep us human. It was Gibbon who said, "A taste for books is the pleasure and glory of my life. It is a taste which I would not exchange for the wealth of the Indies."

Doctor Peck speaks of a certain professor who would go to his books from the chagrins and disappointments of the classroom. Down into their freshness he would plunge his superheated soul as into a mountain spring. Then he was ready for his task again, a kind and patient brother. Books have a peculiar ministry and have done much toward making men better.

The Alchemy of Heaven

There are other Melchizedeks that cross our paths. Sometimes it is a friend who comes with sweet counsel and sympathy and cheer.

Then there are the sweet influences of pictures. Many a soul has become conscious of itself in the contemplation of a beautiful picture. Sometimes we find solace in music and have been lifted up to the very throne of God on the wings of melody. Some old hymn or old song has done much to make men forget the inconsistencies and hard knocks of the world. We cannot fail to be better men and women when we stand before some great building or old ruin or great cathedral and feast our eyes and enrapture our souls with the "frozen poetry" of some pile of stone. Melchizedeks, every one of them, crossing our paths, ready to bless us.

Imagine the dawn of day to occur but once in every decade! How nations would wait for that morning! How men and women who died before that dawn would depart riven with deep yearning regret because they had not lived long enough to witness the splendor of that wonderful hour! And then, when the marvelous morning first began to fling its matchless radiance of purple and crimson and gold over the waiting hills, you can fancy the reverent hush of bird and beast and man that would follow the glowing splendor as it spread into the changing azure of the sky. And when at last the sun in all its shining majesty and glory rose clear and dazzling above the gladdened races of mankind, who can describe the delight, the ecstasy of their enraptured eyes. Yet the same wonder passes us day by day, and none so poor as to do it reverence.

If one, with heart and mind attuned,

will go alone any day into the woods and venture down the long, solemn cathedral aisles of oak and pine, or out into the prairies where tides of grass break into foam of flowers, or up by some winding footpath into the eternal hills, he will have many a revelation. He will have revealed to him the hidden loveliness of the leaf, the myriad beauty of the growing things, and the thousand bonds of service which chain nature to his needs. He will meet many a Melchizedek confronting him ready to bestow a blessing.

Melchizedek came out of obscurity to enrich a pilgrim's life. That was his purpose. Having accomplished his mission he passed on. Was that not enough? To ease another's pain, to give some wanderer a song for the night season, is a privilege given to all men. Earth holds no richer opportunity than this. But let us look at this lesson from Abraham's point of view. His all-important business was to make sure of that blessing which Melchizedek brought. No man has learned to live until he has learned to take lessons from any source which offers. The world is full of ministers of grace. The idea is to learn how to treat them. We call them joy, struggle, fortune, adversity. They are thus only half named. They are more than the words imply. They are messengers from God. To those who believe in the alchemy of heaven all things work together for good.

Jacob struggled with the angel at Jabok. All night he wrestled, and toward morning it seemed as if he were losing his battle. Yet weakened, breathless, he cried, "I will not let thee go except thou bless me." Needless to say he received the blessing. For such a soul it is always written, "He blessed him there." Such is the philosophy of earnest endeavor and living. To find gems in the gravel which hurts our weary feet; to see the silver lining in every cloud; to wring comfort from ungenerous conditions; to discern the way to heaven, through the mist and the storm; to know that Melchizedek stands, ready to bless us, just where the long lane at last is turning—this is the way to live. To live thus is to have a contented soul and a higher and broader vision to inspire us to push on and above the perplexity of the hour.

O God, my heavenly Father, bless Thou and preserve to Thee and to me that dear one whom Thou hast chosen to be my husband; may his life be long, comfortable, and holy, and may I be a continuing blessing and comfort unto him, a sharer in all his sorrows, a meek helper in all the accidents and mutations that may befall in the world, make me lovely forever in his eyes and to him forever dear.

To me unite his heart in deep and reverent love, and mine to him, in all sweetness, charity, and obedience; keep me from all ungentleness, discontent, and unreasonableness of humor or desire; make me humble, obedient, and useful, so that we may delight in each other according to Thy blessed word, making our lives a joyful and continuing portion in Thy holy service, so that at last we two may come together to be partakers of Thy eternal joy. And this I ask for Jesus' sake, Amen.—A WOMAN'S PRAYER, 1863, Found Written in an Old Bible in Athens, Georgia.

Be Strong

Be strong!

We are not here to play, to dream, to drift.

We have hard work to do, and loads to lift.

Shun not the struggle; face it. 'Tis God's gift.

Be strong!

Say not the days are evil,—who's to blame?

And fold the hands and acquiesce—O, shame!

Stand up, speak out, and bravely, in God's name.

Be strong!

It matters not how deep entrenched the wrong,

How hard the battle goes, the day how long.

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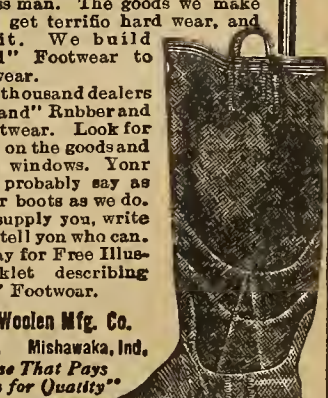
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She Considered a River and Bought a Field

By W. J. Harsha

IN THE Proverb of the Wise Man we read of the prudent woman that "she considereth a field and buyeth it." In New Mexico there is a woman who has surpassed her in nerve if not in prudence; she considered the Rio Grande and decided to purchase a field that bordered that turbulent river's bank.

Let me set down, at least in outline, the amazing story. This job was nothing less than changing the course of one of the most savage and erratic rivers on our continent in order that she might make use of a near-by patch of fine soil. This soil was in imminent danger of washing away, to the total loss of the superior alfalfa growing on it. Men had given up the task. She made sure she could succeed, and went forward.

This resourceful woman's name is Mrs. Lucile Lewis Ferlet. Her maiden name was McKown, and to anyone who knows the McKowns of Virginia this circumstance will be significant. She was born into the life of the wild. Bastrop, Texas, her birthplace, was the center of extensive cattle interests. It was the heart of the range. Every boy of the town had his spurs, every girl her saddle. As soon as little Lucile could sit erect she was tossed to the back of a pony. Her breakfasts came from the chuck wagon. The camp fire was her last sight at night and her first in the morning. She could ride in the round-up; she could help to stem a stampede; she sang the cowboy songs to quiet cattle as they lay under the stars; with the best of the boys she could shout the thrilling "Ki-yi!"

What Kind of an Opportunity Was It?

"I cannot remember a time when I did not long to be a farmer," she told me. "I dreamed of it over my arithmetic. Geography was one large farm to me."

In time she was married to Mr. Tony A. Ferlet, a progressive young business man, and it seemed that her career led indefinitely to the cities. The longing for a farm remained, but she almost despaired of bringing it to reality. They took up residence in San Antonio, Texas.



The alfalfa grows to a good height

Her husband engaged in the printing and publishing business. He prospered. With prosperity came to him a natural determination to remain in that business. Farming was the last thing in his intentions or desires.

"For many years I coaxed him to let me be a farmer," she said with a merry laugh. "I knew that the only way this could be brought about was to persuade him to sell out his business and give me the money received, or at least a considerable part of it. I coaxed him to do this. He thought I had taken leave of my senses. We had a young family to support and educate, and we were getting on in the world with reasonable rapidity. But at last I persuaded him. He sold out his business. He gave me what he called 'a bunch of money' and said, 'Go and use it up as you please, but let up on me about farming!'"

From another source I learned that this "bunch of money" was in the neighborhood of twelve hundred dollars. I did not question Mrs. Ferlet as to the sum and she did not mention it, but this was within a few dollars of her available capital.

"There was one thing on which I was settled," she went on. "I was convinced that the only way to make a sure and satisfactory success out of the soil is to use irrigation. I had seen enough of the old-time method of trusting to rainfall. I said to myself, 'If there is a place where sunshine is plentiful and the soil is good and at the same time there is a supply of water for irrigation, I am going to find it and there I will buy.'"

"To leave me to my own resources, perhaps, my husband went east on a trip and I started northwest. Almost immediately I located my present ranch. I heard of a man who owned a fine piece of alfalfa that was in danger of destruction by the encroachment of the Rio Grande. I was told that this man had quite lost his grip on the situation and that his wife was so frightened she had escaped to El Paso. The land was offered at a sacrifice for cash. This appeared to be my opportunity, and I was not slow to investigate it.

"I took a good long look at the situation. It was mid-summer. The river was peaceful enough at that season. It ran, a gentle stream, between its deeply worn banks. But it was evident that it was eating into the western side of the alfalfa field.

"The river was the situation—all of it. On the land stood alfalfa two feet high and more, and so thick one could scarcely walk through it. But the Rio Grande was the key to the problem. For a week I walked up and down on its banks thinking the thing over. The prosperous little town of Anthony, New Mexico, was only two miles distant. The nearness of the fine agricultural college of the State appealed to me, for I felt that there I could

obtain the practical information I should need, and also that to that institution I could send my boys when the time came. Moreover, the markets promised by the growing mining towns in the mountains to the west of the valley gave me assurance that I should be able to sell what I produced. All of these matters I considered carefully, but the main problem was, 'What am I to do with this cantankerous river?' Well, I resolved to tackle it and make it behave.

"It was out of its proper channel. At one time it was straight and flowed something like a mile from the land I had purchased. The mouth of the old cut-off was choked; the original channel was filled with debris and washings. The river had swerved. My plan was to bring it back from its wanderings.

"In itself this was no small undertaking. But my main difficulties, I discovered, came from the apathy or skepticism of the settlers who would be benefited by the task quite as much as I should be. The town of Anthony itself was menaced.

"It was necessary for me to secure permission from the state engineer to make the cut-off. In his O. K. of the project he appropriated two hundred dollars from his department toward the expenses of the undertaking. I did not use this money. It was turned over, afterward, to the Three Saints Community Irrigation Company, and they finished the work. But I had to make a beginning myself with such help as I could secure from neighbors. We went at it. Every available man and team was put on the job. By day I rode the line of work, urging the workers on. At night I lay on my bed wondering where the money was to come from to make prompt payments. It always came—to this day I do not know just how. Like a repentant prodigal the Rio Grande limped back home, and it will never digress again, for our Uncle Samuel has taken hold of the matter and next year the Elephant Butte Reclamation project will have full control of the waters."

Making the Reclaimed Land Pay

"I took possession of my ranch in mid-summer of 1900. My entire available domain at that time consisted of sixty-two and a half acres. Some years I have an abundance of water; in other years I, with my neighbors, fall short. To rectify this shortage is the aim of Uncle Sam, who has taken hold of our valley and its great river. But in the main I have succeeded beyond my expectations, and as for my good husband—well, he is quite dumfounded. I have elevated him to the proud position of my shipper. We are one in our endeavors, but I am manager of this concern—don't forget that for an instant!"

"First of all I decided on a name for my ranch. I think everyone who takes pride in his farm ought to give it a distinctive name. This can be used effectively on letterheads and in other forms of ad-

vertising. I selected the name, Rancho San Ysidro. I posted this name on a bulletin board and nailed the board at the side of the front gate, on the county road.

"Then I looked over my ranch to see what could be made out of it the first year. There were sixty acres in alfalfa, as fine-looking as any legume could be. But, as I have said, it was now mid-summer and the alfalfa had been neglected. It had gone to seed and was practically worthless as hay, but I could save the alfalfa seed. I put men and teams at work and kept them at it almost literally night and day until the crop was harvested. I sold that seed readily for sixteen hundred dollars.

"Promptly after taking off this seed crop I had the alfalfa field irrigated, and the hay taken off brought me \$746. There was a small field of corn on the place. This had been planted and tended by a neighbor who was to receive a share for his work. My share netted me 160 bushels, and this I kept to feed my stock.

"Now, as to this orchard in which we are sitting. There is a good acre in it, and I have whipped it to some shape. It is set to peaches, apricots, apples, and quinces. It yields me good returns, and I am purposing to pay more attention to fruit-growing in the coming weeks and months.

"On the smaller fields of my place I make some experiments. For instance, last year on land adjoining the orchard I put in a variety of corn known as Mexican June. I got the seed from our agricultural college. There was an acre and a quarter of it, and from this I took off 107 bushels. It was very fine corn and some of it took a prize at the Albuquerque Fair. A good deal of it I sold for seed and made a good profit.

"I make a specialty of onions. This is one of the best crops for the region. In addition I have about a quarter of an acre in other garden stuff.

"My main crop, of course, is alfalfa. So far as I know it is the most dependable crop that grows; it never is quite a failure, whether you get water for irrigation or not. I now have 68 acres in this splendid legume, and it is my pride and joy. I have a full hay-making equipment, such as mowers, dump rakes, sweep rakes, and motor baler. I keep the stock necessary to handle this equipment with speed and economy. I believe in labor-saving tools and in suitable animals to move them. I hire the best help I can secure, and pay a price that is not only satisfactory but alluring. In timing my harvesting I am careful to avoid the mid-summer showers—mid-summer is about the only time we have rains of any consequence in this valley."

"They tell me you get right out to the fields yourself to see that the work is well done," I put in.

"To be sure. Even with my superior help I should get only four cuttings some seasons; my presence in the fields ensures five cuttings regularly."

"What are your average returns?"

"In full-water seasons my average is 3,300 bales from each of the four cuttings, and from 1,200 to 1,500 bales for the fifth cutting. Or, to put it another way, my average for three years, not counting 1913, was as follows: Yield, 7 tons per acre; harvesting cost \$3.20 per ton; selling price, f. o. b. my railway station, \$14 per ton. You can figure out what my 68 acres bring in."

"More than five thousand dollars net profit!" I exclaimed in admiration of her skill.

Dealing Wisely with Farm Boys

"I have been very fortunate in securing the co-operation of all my family." Mrs. Ferlet went on. "Two of my boys, Lorraine D. and T. A. Jr., have decided to take up and perfect them-

selves in the business of farming, and with that end in view have taken courses at the New Mexico Agricultural College.

"It is surprising to me that some farmers discount the use of a state agricultural institution, even if they do not openly ridicule its efforts to instruct youth in this noble occupation. To be sure, professors may be inclined more to theory than to practice, in agriculture as in other branches, but our college has demonstrated the advantage of having such an institution near-by, particularly in the way of inspiring youth with a desire to stay at home and take up farming as a life-work. My own boys have been convinced of the wisdom of co-operating with the college, and also of centering their efforts here at home."

A Crop of Neighbors

"I have thus given to my boys the best training I know of to fit them to assist and follow me in my work. And to all farmers who are wondering how they can keep their boys on the farm I would suggest some such method as has proven successful in my case. Take your boys into actual partnership with you. Show enthusiasm for your work yourself and thus inspire enthusiasm in your boys. There is nothing more contagious than enthusiasm. Get close to your agricultural college—in spirit, if not in actual proximity. Throw your boys actively within the influence of the faculty and students of that institution. As with all colleges, the best influence of the agricultural college lies in its atmosphere.

"As a subject for thought, however, I would have you note that after the young man has succeeded to a knowledge of his soils and the science of growing things successfully, he is still confronted with perhaps the most important problem of all—that of selling his products at a profit. I believe it will not be long before the agricultural colleges will take the lead in showing farmers how to combine and mutually place themselves on a business selling basis; and, more than that, encourage and assist them in hav-



The owner in her alfalfa field

ing their own help—each-other banks, so that they may have cheaper money to develop more fully the farming industry. I believe this will soon be the action of our Government through the colleges; in fact, some colleges have already started on their own initiative. At any rate, proximity to an agricultural college I consider a valuable asset.

"And take it from me, that the best product of this valley will not always be alfalfa, but men; and every time our college or our water association takes up a quarter section and adds to it a thinking man, full-fledged in all his powers, it can be said of either that it has well performed its mission.

"What we want is more farmers of the right sort—men and women who will act in harmony with their neighbors. True neighborliness is the thing. On all my printed matter I have as a slogan, 'Come and neighbor with us!' We want a real neighborhood, not a mere collection of grasping, quarreling, scrambling farmers; and this means the growing of things and the conducting of all farming operations on a community agreement plan, each grower to sign up to grow so many acres of a certain thing so as to make up carload shipments.

"Then we need better roads all over the country, to save horsepower and to prevent damage to tender products on their way to the shipping station. And, thirdly, my experience shows that what is needed in co-operative selling associations is not so much elaborate by-laws, or even a large and loyal membership, as it is leaders of experience and integrity, who know how to sell and build up business. In all this talk of co-operative associations, in all these movements to bring the talk to definite results, there is danger that poor men or evil men will come to the front. Such associations, above all others, must be conducted with business economy. A misfit at the head of a marketing association is a menace to the future, a loss of prestige, and a loss of money, and the grower finds himself compelled to dig down into his pocket and make good."



Mrs. Ferlet, who did it



Good profits come from baling the alfalfa

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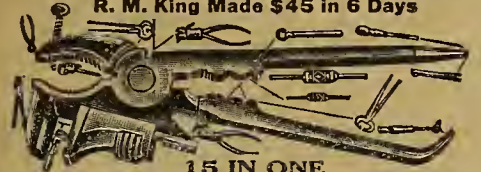


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By-Products of the Kitchen

By Mary Hamilton Talbott

"WHY are you throwing that away?" said a good housekeeper friend as I was about to discard the rind of a pine-apple cheese. "Never throw away the rind of this or an Edam cheese until they have served several times for baked macaroni; they save the expense of purchasing cheese. Just boil the macaroni or spaghetti, mix with cream sauce, turn into the shell, and bake fifteen minutes in a slow oven. You have a most delightful flavor of cheese and did not spend an extra cent. Clean the rind nicely after each baking and it can be used several times." Small bits of cheese should be grated and dried and kept in a glass jar for cheese fingers, cheese straws, or any of the many uses for which it is used.

Most of the science of saving lies in the way meals are planned. When there is a lot of bread on hand, make a bread pudding or have escalloped oysters. But remember bread pudding is not an economical dish when made with very dry bread, as it absorbs too much milk. Bread, by the way, is a by-product which needs close attention, or a great many dollars are lost in a year. Left-over pieces of uniform size should be used for toast; smaller pieces cut up at once into croûtons, browned, and put in a tin box, and the ends and unsightly pieces cut up and dried to be used for stuffing or brown Betty pudding, or crushed for crumbs for breading chops, fish, or vegetables. And, too, the very small bits in the bread box can be made into bread griddle cakes. In planning the desserts look well about the pantry. From tiny bits of fruits one may have appetizing dishes. Prunes, apple sauce, or a baked apple can be mixed with the whites of eggs and baked after the order of a soufflé. This will often save the whites of the eggs and a small quantity of fruit that would be useless served alone. If there is half a glass of jelly it can be converted into jelly Marguerites for the "sweet" ending of the children's supper. Left-over coffee will make coffee jelly.

Small quantities of milk and cream, frequently thrown away, after a day or two old, should be put together and saved in a cold place until there is enough to make some Dutch cheese. Then heat slowly until it "wheys," pour into a bag, and hang up to drain. When it is about the consistency of butter, mix in it a little salt and it is ready to serve with coffee at dinner, or mix with peppers to serve as an accompaniment to the salad. If you do not care for this cheese keep all the sour milk and cream anyway; it is good to clean the silver or linoleum.

Home-candied lemon and orange rind are better for fruit cake and mincemeat than any which can be bought, and, too, the latter is always expensive. Clean out the inside of the rinds and boil in clear water until tender, drain, and boil in a syrup until transparent; drain, and roll in sugar. If the orange peel is cut into strips like straws and candied this way it makes a most delicious sweetmeat. The syrup in which the orange rind was candied may be saved and used in pudding sauce. The yellow rind of lemons which have been used for lemonade should be grated and mixed with sugar to be used as flavoring. The peelings from peaches, provided they have been washed, make admirable marmalade and good jelly, though not stiff. Watermelon rind may be spiced or preserved.

To utilize the waste in the kitchen there must be system and attention to details. The writer has a special shelf in the pantry and one in the refrigerator on which all left-overs are put, and each day before the bill of fare is made up these are carefully looked over and utilized. And early in the morning when the housewife who does her own work must be in the kitchen is the time to look after the small savings.

Utilizing waste products fails of its purpose if it takes too much time and involves too much labor.

Saving Coal

By Mary Hamilton Talbott

A WORD about an oven indicator which will save tons of coal or quantities of gas, to say nothing of hours of anxiety. This is a clock-like apparatus that fits into the oven door. The spring is expanded or loosened by the heat, and in turn moves the hands on the face. The face looks like that of a clock, and the moment the hands move, the housewife can tell at a glance whether the oven is too hot or too cold, thus doing away with the necessity of opening the oven door to obtain this information, and thereby cooling the oven. It also warns of too great heat, which means a waste of coal. And right here it might be well to say a word about having the fire too hot. Many cooks say

if the oven is too hot put in a pan of cold water. Why build an enormous fire and then have to protect the cakes and pies with paper to prevent burning? This hardly ever happens with an indicator, for it warns the cook before the stove gets too hot, and she can adjust the drafts. Such an attachment is inexpensive at first cost and in the end saves a great deal of coal.

Bed-Making

By Mrs. Gordon W. Randlett

FOR health and comfort we now use a brass, white enameled, or iron bed in place of the heavy wooden beds. A spiral spring is used if one wants the best. If the mattress be of hair, wool, or cotton it should be the best of its kind. A mattress pad should be used to cover the mattress.

To make the bed, place mattress pad smoothly over the mattress, then spread the lower sheet right side up, and tuck in all around. Place upper sheet wrong side up with wide hem six inches above the top edge of mattress, if you wish to fold the top sheet back over the blankets. I do not like the upper sheet so much longer than the blankets, so I place the upper sheet six inches from the top edge of the mattress and tuck the lower end firmly under the mattress. Spread blankets, with the open edges just below the wide hem in the upper sheet, smooth downward, and tuck in at bottom. With metal beds do not tuck in at the sides. The spread should be large enough to hang over the foot and sides and cover all the top of the mattress. Fold the comfort or extra blankets across the foot of the bed.

In order to prevent dust from coming up through the springs to the mattress there should be a protector made of some wash material.

Open the windows in the room, and turn the mattress back over the foot of the bed about every other day to get a good airing. Once a month take the mattress out of doors for a good sunning and beating. Take the blankets and comfort out oftener, as they need more airing and beating than the mattress, for they are more exposed to the dust.

Ornamental Value of the Castor Bean

By H. F. Grinstead

AS a quick-growing plant for screens or hedges in the yard I know of nothing equal to the castor bean. Its value is greatest on new places where one must wait two or three years for the growth of permanent plants and vines. Castor beans must be planted a foot apart after the ground is warm in the spring. One variety has a deep-green foliage, while another is red along the stems; these should be planted together, and the variety will be pleasing. The larger kinds frequently grow to a height of six or eight feet, and in some instances higher. For screening unsightly objects in the back yard they cannot be surpassed, and will give a pleasing effect when planted in the center of flower beds, two or three plants in a place. Castor beans delight in a warm soil and respond to fertilizer and frequent cultivation.

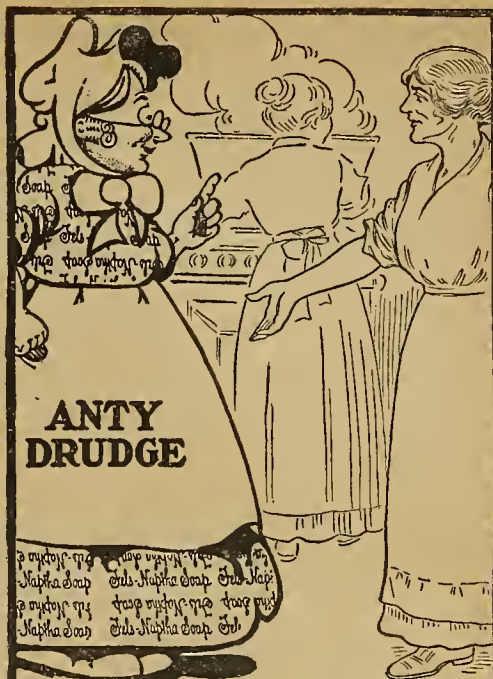
Better Than Hanging Baskets

By John T. Timmons

EVERY lover of flowers has an admiration for a beautiful hanging basket. They supply a want that nothing else will approach, and a veranda or window with one or more well-arranged baskets certainly presents an attractive appearance.

Within the past few months the pot hanger, a bit of wire so arranged as to hold a pot in the same position as the old-fashioned basket, has become very popular in the cities where verandas are ornamented with porch boxes, climbers, and baskets. Any size pot can be used. The six, eight, and ten inch pots are the most used. The wire hangers circle the pot beneath the rim, and a ball is attached by which it can be suspended to a hook or other wire. The ferns, begonias, geraniums, and all other plants used so extensively for this sort of decoration grow better and are easier cared for in the pot than in a basket. The foliage soon covers the pot, and even if it does not, fancy pots can be used, and the effect is very pleasing.

The pot hangers are sold by all florists and dealers in wire goods and are very cheap, while pots do not cost half as much as the wire baskets. A person handy in making articles from wire can easily make several of these pot holders, and all that is needed, then, is to hang up well-filled pots that make a neat appearance. In this way the pots can be changed frequently.



ANTY DRUDGE

Mrs. Disagree—"Anty Drudge, what's this nonsense you told Mary about not boiling clothes? The idea of these young things telling their mothers how to wash! I settled her!"

Anty Drudge—"Well, you can't settle me, because I'm old enough to have some sense—so's Mary, for that matter. She's a sight more sensible than her mother about some things! I told her about Fels-Naptha Soap and how easy it makes work."

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The Housewife's Club

A New Dish for Many

By Mrs. P. C. Henry

WHILE taking a meal at a friend's house we were introduced to a new dish that we had never seen nor heard of before—sweetbreads. Our host informed us that about twenty years ago sweetbreads were thrown away as waste by the large packing houses, but now they are carefully preserved and sell at thirty cents per pound.

Sweetbreads are composed of a white glandular substance and are found in calves only, attached to the esophagus near the first pair of ribs. They are generally composed of several portions about as large as a child's hand.

After having made the acquaintance of this delicious dish, we never permit them to go to waste on our place; and yet how few people in the country districts are acquainted with this delicate dish. Here is my way of preparing them. After cutting away the tissue by which they are attached, wash thoroughly. Then parboil until they are tender, roll in flour and fry in hot lard until they are rich brown on both sides.

IN MAKING DUMPLINGS, if you will roll each one in flour you can make them much softer, and they will not get heavy.

Mrs. J. S., Ohio.

PLACE ONE PINT OF BREAD CRUSTS in a bowl, and at night strain in a pint of new milk, let stand overnight, and add to the mixture one well-beaten egg, one teaspoonful of baking powder, and enough flour to make a thin batter; fry in small cakes on buttered griddle.

Mrs. J. E. B., Indiana.

KITCHEN HINTS—Carefully dry your celery tops and all left-over pieces, and use them to flavor your soups and stews later on, in the season when celery is more expensive than now. All the flavor is retained.

Mrs. M. J. S., Kentucky.

CARE OF PALMS—I sponge the leaves of my palms once a week with milk and water and find that they do not develop the withered brown spots which are so often seen on palms which are sponged with water only.

Mrs. L. G., Colorado.

WHEN TOO MUCH SALT HAS BEEN USED—If too much salt has been put by mistake into the soup, pot roast, or anything of the kind, a simple way to remove it is to tie a cloth over the top of the cooking utensil and cover this cloth with a quantity of ordinary flour. The steam

rising from the soup or roast will cause the flour to draw out the salt.

C. A. B., California.

WHEN CAKES STICK TO THE PAN—No matter how careful one may be, a delicious cake is sometimes ruined when turning it from the pan. When the cake sticks set the pan on a cloth wrung out of warm water and leave for a few minutes. The cake will then turn out without any trouble.

C. A. B., California.

OBTAIN MORE JUICE—If a lemon is warmed before squeezing it, nearly double the quantity of juice will be obtained.

B. C., Kentucky.

ENGLISH MUFFINS—Two cupfuls of flour, two teaspoonfuls of baking powder, one teaspoonful of sugar, one-half



teaspoonful of salt, two eggs well beaten, and one cupful of milk. Mix all well together and bake in gem pans. This will make twelve muffins.

IF ONE IS NOT FOND of the cold pork baked in beans it is better to grind the pork up fine in a food chopper and add to beans after they are parboiled. It will season the beans better, and there will be no pork to be a left-over.

Here are some recipes in which yeast is the leavening power. Try one when you are doing the Saturday baking.

SOUTHERN TEA BISCUITS—If you want these for supper at six they must be begun at one. Into a quart of sifted flour rub a teaspoonful of sugar, a teaspoonful of salt and a tablespoonful each of lard and butter. Dissolve one-half cake of compressed yeast in a little warm water, add to a cupful of milk, and mix well with the flour; cover, and set in a warm place to rise. When it is light turn it out on the bread board, and roll out to the thickness of half an inch. Cut out into rounds, and put two together with melted butter between. Let them rise an hour, and bake in a moderate oven.

RAISED MUFFINS—Dissolve one-half cake of compressed yeast in a cupful of lukewarm milk or water, add half a teaspoonful of salt, one pint of lukewarm milk, or milk and water, one tablespoonful of sugar, two tablespoonfuls of lard or butter, two eggs, well beaten, and sifted flour enough to make a fairly stiff batter. Let it stand overnight to rise, and in the morning fill muffin pans half full, and bake in a quick oven.

RAISED WAFFLES—The rule for muffins will do equally well for waffles, if the batter is made thinner. It should be of a consistency to pour from a pitcher onto the waffle iron, which should be well heated and thoroughly greased. The same batter may be used for griddle-cakes also.

RAISED DOUGHNUTS—Early in the evening stir half a cake of compressed yeast into one fourth of a cupful of warm water, mix in enough flour to make a soft dough, knead till very elastic, cut it across the top in both directions, and put it into a bowl of tepid water. When it is very puffy and light remove with a skimmer to the mixing bowl; add a teaspoonful of salt, a cupful of scalded and cooled milk, one third of a cupful of melted butter, two beaten eggs, three fourths of a cupful of sugar, nutmeg and cinnamon to taste and flour to make a soft dough. Knead at least fifteen minutes, return it to the bowl, and keep in a fairly warm place till morning. It should be light and puffy; turn out on a bread board, roll out to half an inch in thickness, and cut as you like. Let rise, and fry as usual, but longer than quick doughnuts.

ELECTION CAKE—Weigh one-half pound of sifted flour, rub into it five ounces of butter, one cupful of sugar and half a teaspoonful of salt. Scald two cupfuls of milk, and when lukewarm add two well-beaten eggs and one cake of compressed yeast, dissolved in a little of the milk. Make a hole in the center of the flour, pour in the milk mixture, stir in enough of the flour to make a thin batter, and let rise for three hours. Then beat in all the flour, add the juice and grated rind of an orange, half a nutmeg, grated, and a little cinnamon. Pour into a well-greased pan, and let rise till very light, when it should be baked for one hour in a moderate oven.

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Regal Rugs, 6x9, reversible, all-wool finish, \$3.90; Brussels Rugs, 9x12, exceptional value, \$3.75; Superb Brussels Rugs, 9x12, \$9.00; Velvets, 9x12, \$17.50; Elegant Axminster, 9x12, \$16.80. Splendid Wilton Rugs, Tapestry Curtains, Linoleum and Furniture at bed-rock prices. Send for new catalogue, illustrating goods in colors—It's free.

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Keep a Can Handy

LARGE CAN 10c



The Little White Wagon of the R. F. D.

By Lydia M. Dunham O'Neil

I KIND of like the city, with its quick, snappy ways;
The long, brilliant nights and the short, happy days;
The streets full of people, the buildings so high;
The cars and the autos that dash swiftly by;
The big police in uniform, dignified and fine;
The band that in the evening plays, the million lights that shine;
I like it; but I'm lonesome for what I never see—
The little white wagon of the R. F. D.

Of course I miss the river, winding quietly away,
And the blue hills, melting into soft, distant gray;
The broad, blooming meadows and the green pasture land;
The noisy little brooklet by the stone bridge spanned;
The rabbit in the forest, the whippoorwill, the quail,
The silver-throated brown thrush, the timid wild deer's trail;
But I would not be lonely if only I could see
The little white wagon of the R. F. D.

I'm going back to-morrow, to see the folks I know;
To spend the hours in dreaming where pink wild roses grow;
To walk where green banks, mossy, yield to weary feet;
To talk about the weather, the corn, the oats, the wheat;
To walk adown the path again, to lean against the gate,
For the postman's coming eagerly to wait.
I'm going back to-morrow, going back to see
The little white wagon of the R. F. D.



Stirring Up Ann

[CONTINUED FROM PAGE 26]

she said a woman knew how to do things. "But, Ann," said Mandy, "are you going to keep it? You don't know anything about its folks, and after working hard all your life it's time you took a rest. It will be quite a task to bring up that boy."

"Am I going to keep it, Mandy Higgins!" Ann cried excitedly, an expression of outraged surprise spreading over her face. "Of course I am going to. Didn't its mother give it to me, and doesn't it smile at me already? And, Mandy," she continued, "don't I need something to work for same as you other women? I haven't known what to do with myself since Pa and Ma died. I haven't wanted to go out with you other women because I hadn't anything real to do as you had. I wasn't needed anywhere; but now I know I am, and that God sent this little fellow because I need him and he needs me." She stopped with a sob. We put our arms around her and all cried together, which is characteristic of women.

After we got calm Mandy said, "These aren't enough clothes for him."

"No, I s'pose not," Ann agreed.

"How would you like to have the

Improvement Society come up to-morrow afternoon and make some for him?"

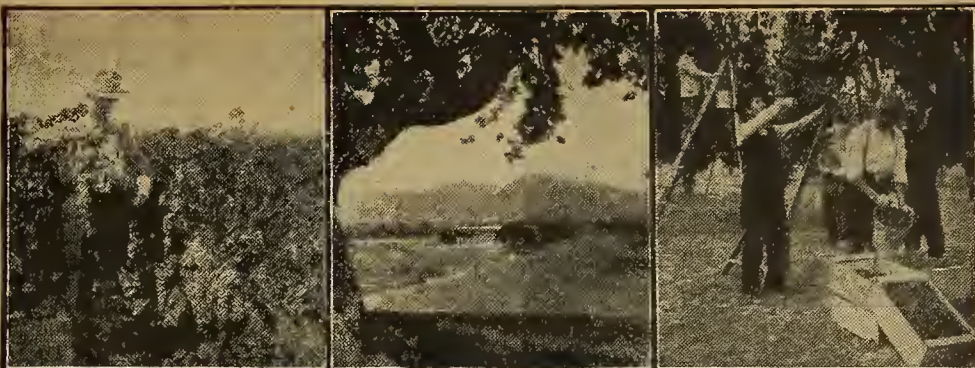
"Do you s'pose they would?" said Ann anxiously. "You know I wouldn't join you a spell back."

"Shucks! They will be glad to. Why don't you join now?" asked Mandy.

"Oh, do you think they would have me? It didn't seem any use to join when I felt so sour toward folks, but somehow this little baby makes me feel different toward everybody."

That day on the way home Mandy chuckled to think that Ann would never be an old maid now, and I kept rejoicing when I thought that we women were able to make this hollow a happier place.

ONE hears frequently of a broken rib, a sprained ankle, a bad bruise, etc., caused by slipping when about to step out of the bathtub. One mother, who has so many little tots she finds it necessary to teach them, at an early age, to take their own baths, met this difficulty by means of a bath mat. She took an old blanket, folded it twice and stitched a cover of Turkish toweling on both sides. This made a mat large enough to cover the bottom of the tub and heavy enough to keep in place. When not in use it hangs on a line where it quickly dries out.



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Ambitious, progressive farmers are wanted to settle this wonderful valley. I know where the opportunities are, and I will gladly point them out. I can save you time and travel, because you need not duplicate the investigations my staff has made.

Our books, "San Joaquin Valley," "Dairying" and "Poultry," will give you a great deal of information. Then if you will write me what more you would like to know, I will tell you. The books are free. So is all the assistance and information which I can give you.

Santa Fe agricultural demonstrators will assist new settlers in selecting the right crops to get best results. One of these men will help you if you wish.

Just say "Send California books."

C. L. Seagraves, General Colonization Agent
Atchison, Topeka & Santa Fe Railway
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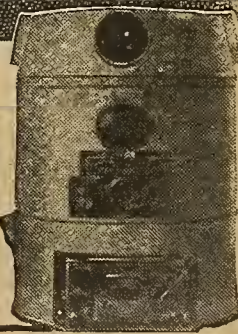
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Going to school

"WHAT are you going to do when you are grown up?" This question put to any child of either sex on any country road in Ireland will, in nine cases out of ten, bring, unhesitatingly, the response: "I'm going to America, sir."

With a large proportion of the children of the Emerald Isle emigration is a tradition. From the days of early childhood, when most youngsters would have thoughts only for play and school, these sons and daughters of Erin learn to look upon America as their destiny. As they grow up the prospect of the voyage to the land of promise beyond the Atlantic is a dream ever before them, and youthful ambition is kept aflame by the tales that reach the "ould sod" of the success which has come to those who have preceded them to the "other Ireland," as it is fondly nicknamed.

Their Work in the Home

Irish children, regarded as the American citizens of to-morrow, may inspire an especial interest, but in reality such interest is merited by their own good qualities: their manliness and womanliness; the way in which they shoulder at an early age many of the lesser burdens of life; the spirit of hospitality that they manifest toward the stranger; and their flashes of wit, once an instinctive shyness has been overcome.

It is from the country districts of the verdant island that there have come to the United States a large majority of the millions of Irish lads and colleens who have landed upon our shores during the past two thirds of a century, and rural Ireland is the proper environment in which to observe those children who may be said to be characteristic of Ireland. Indeed, the land of the shamrock is preeminently an agricultural country, and the lure of the cities seems to exert scant influence upon the rising generation. If the young people do not cross the Atlantic they are more than likely to settle down upon farms in the neighborhood where they were raised, and this is especially true nowadays, since the enlightened laws of the past few years have made it possible for the Irish ruralist to enjoy outright ownership in a farm of his own and to pay for it on easy terms extending over a long term of years.

Any traveler who forsakes, as did the writer, the beaten paths in Ireland and journeys by jaunting car through the heart of the real country is bound to be impressed all along the way by the variety of tasks assigned to these junior members of the community. Almost all country children, to be sure, are a real help to their parents in carrying on the routine of the farm, but it does seem as though the Irish children lead the world

in the range of their responsibilities. The cows, the chickens, and the pigs—and the latter are numerous on the average Irish farm—are their special charges, and on almost any hillside one may see rosy-cheeked barefoot Irish girls digging potatoes, the great Irish staple which last year attained throughout the entire island the phenomenal average yield of nearly six and one-half tons per acre.

The Irish Burro

Children everywhere in rural Ireland have one chore for which their American consins have no exact counterpart. It is the "bringing in" of the peat, or turf, which constitutes the chief and almost the sole fuel supply of Ireland, and deposits of which cover a large proportion of the island. The peat is usually cut in the spring, and this is a busy time for the youngsters who go into the bogs and help their elders in getting out the fuel supply for the ensuing season. The actual cutting of the peat is usually done by men, but it falls to the lot of the children to stack the bricks or blocks in even piles. Theirs, too, is the larger task of transferring the peat from the bog to the farmhouse, which latter may be distant a mile or more. In some instances the peat is removed as soon as taken from the bog and is stacked to dry just outside the farmhouse door, but more often the fuel is piled at the bog and the children are sent for a supply as needed during the year for warming their homes.

It is in this fetching and carrying of the peat that we are introduced to what may truly be denominated a universal, intimate relationship between Irish children and their droll little beasts of burden. In work and in play the average Irish youngster is almost inseparable from a diminutive donkey that is in size and traits the counterpart of the burro of western America. The slow-moving but sure-footed little animal is relied upon not only to transport the peat but also to convey to the town markets the potatoes and other produce, and to bring back the necessities of life from the stores. In many instances the dwarf draft animal is hitched to a small cart, but for certain forms of traffic, including the conveyance of peat, the preference is usually for huge pack baskets which hang one on either side of the monse-colored steed and almost totally conceal the animal's body.

It is no unusual sight in Ireland to behold a country road choked with a long procession of the carts or pack animals, each with its boy or girl attendant—the latter so shy in many instances that

they will enshroud themselves in the inevitable Irish shawl if a camera is pointed in their direction. Especially will such a caravan be found on every rural road leading to a "county town" or other trading center on the day of the regular monthly fair when the country folk come from far and near to sell their live stock or other products to the buyers who have come long distances to this periodic mart. And in those sections of Ireland where, thanks to the new era of prosperity, the co-operative creamery has become an institution, boy drivers traverse regular routes each day, bringing to the creamery cart-loads of milk cans from all the neighboring farms.

Generally speaking it is a most healthful life that these Irish children lead. Save for the hours of sleep, most of it is passed out of doors, for the native learns to disregard those frequent showers which make the Emerald Isle a land

of alternating smiles and tears, as the weather has been so aptly described. Even in the old days when tourists were scandalized by the smallness or total absence of windows in the poorer Irish huts the doors of these modest habitations stood open all day and most of the night, and the inmates really had more fresh air than the occupants of many a modern American home. Attendance at school usually necessitates a long walk twice a day, and many of the teachers make it a practice to hold their classes in the open air whenever weather conditions will permit.

Home Improvements

New influences of considerable moment have come into the lives of the children of Ireland during the past decade. One of the most important of these is found in the era of better homes which has dawned in Erin. The old stone and turf cabins are rapidly disappearing from this fair land, and in their places are rising neat, comfortable cozy cottages, for the erection of which the Government loans money to be repaid at the rate of perhaps fifty cents per week. Just here it should perhaps be explained that it is for the agricultural laborers and not for the farm-owners that these new cottages are being provided. The owner of a farm is supposed to have means to build a farmhouse at will, although the local Government will loan him money if he wishes it,—but the authorities have extended the helping hand to the farm laborers who receive very much smaller wages than are paid to help in America, the land of good wages.



Children are a real help to parents

Up to date nearly fifty thousand of these new cottages have been erected in a land which is no larger than one of our smaller States, and it is accounted truly remarkable what an interest the children are taking in the home-making. The instruction in the present-day school encourages them in this, and in most communities prizes of twenty-five dollars or more are offered each year for the neatest cottage, the best-kept garden, etc. The average cottage is set in its own garden plot of an acre or so, and inasmuch as the husband and father is likely to be at work all day, on a more or less distant farm, the care of this little tract devolves upon the children, and right creditably have they acquitted themselves. Ireland now has a governmental agricultural department similar to ours here in the United States.

The Boys and Girls are Encouraged

Another new influence which has appeared in twentieth-century Ireland, and which is aiding "to keep the boys and girls at home," is found in the upbuilding of what are known as the cottage industries—that is, occupations which may be carried on at home, particularly during the long winter days when there is little to do with respect to tilling the soil.

Everything possible is being done to encourage the Irish girls in their enthusiasm for work with linen and lace. Regular lace schools have been established in many communities, and where the population is too sparse to justify a regular school, traveling teachers are employed to journey from settlement to settlement, giving instruction in the homes. The local Government furnishes patterns free to the girls, and in some instances also furnishes thread and other material to workers who have no funds to invest in supplies. Many of the pupils enter the lace classes when very young, and it may be of interest in this connection to mention that the wonderful cobweb-like robe worn by the present Queen of England at her coronation was made by two Irish girls who toiled for months in a little mountain cottage in a remote section of Ireland to produce this masterpiece of modern lacework.

Boys, of course, have not participated to such an extent as the girls in the home and cottage industries which have gained foothold among the youthful rural workers, but in some sections of Ireland, notably in the vicinity of the far-famed Lakes of Killarney, manual-training schools have been established where Irish lads are being taught wood-carving and arts and crafts metal-work.

To ascribe it to the Celtic temperament is perhaps the only explanation of the proverbial light-heartedness of the Irish children, for there is likely to be more work than play in their lives.



A letter from the United States



One of the "cottage industries"



Bringing in the peat



Every youngster loves the diminutive donkey

Before making up anything for Dessert, observe particularly the advantages obtained by using

JELL-O



for making many of the desserts described in every recipe book.

Compare the old style Apple Snow recipe with the Jell-O recipe, or the recipes for Charlotte Russe, Bavarian Cream, Pineapple Trifle, Russian Sponge, and many other popular dishes.

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Dept. 89 NATIONAL SALESMEN'S TRAINING ASS'N.
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Experience Bazaar

Here is an open market for the exchange of experiences. Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

DEAR FIRESIDE EDITOR: Some months ago an article appeared in FARM AND FIRESIDE under the title, "How I Earned My First Hundred." I didn't have fifty cents at the time, and that hundred sounded good to me. The author and I had a few things in common, only I had the advantage of perfect health.

My home is on a large farm where everything is plentiful save ready money.

My first effort at money-getting was to go out by the day. This could be accomplished when work was slack at home.

When a swarm of bees starved out I made beeswax and sold it. Winter onion sets were gathered and sent to a local seedsman. Part of the summer's supply of lard was disposed of when it was scarce in the market.

It had been my habit to give away fruit, accepting profuse thanks with, "I'm glad if you can use it; it's no use to me."

In the spring I peddled the early strawberries. I found a woman who gladly paid the market price for a favorite variety of summer apples. I tended the grapevines so well that when the winter's supply was cared for I had a half-dozen bushels to sell. Then came plums and peaches, and I searched the pastures for wild blackberries and gooseberries.

When winter came I sold a few dozen quarts of cauned fruit to some village women. Then I pieced and made quilts for women who had less time and better incomes than I.

When the year was done I had banked twenty-two and a half dollars.

Late in the winter I purchased a second-hand incubator. Chickens did well for me. They, with boarders and a repetition of the first year's methods, have enabled me to place my first hundred in the Postal Savings Bank.

D. E., Missouri.

DEAR FIRESIDE EDITOR: In your last paper you asked your readers to tell you how a woman can make money on the farm. Now, I am past sixty-three, and I am seldom without money. I do various kinds of work. I raised about two thousand cabbages last year, which I sold at one and a half to two cents a pound. I planted mostly the Danish Baldhead. Quite a good many weighed from eight to ten pounds. I raise strawberries, and I had about forty bushels of potatoes, which I sold at ninety cents and one dollar per bushel, besides having all I wanted to use through the summer.

I keep from five to seven cows, and as we live near a summer resort I sell milk, cream and butter to the cottagers, as well as onions, lettuce, and other garden stuff. When hoeing time comes I hire a boy for a few days to help in the garden.

I would like to hear from other women; perhaps some of them think this is not a woman's work, but I never have to ask my husband for money; I am made independent by working for myself.

C. M., Pennsylvania.

DEAR FIRESIDE EDITOR: Most of my success in life may be attributed to about two lines in FARM AND FIRESIDE, to the effect that a person ought to achieve success in life if he had a head and one hand.

Owing to infant paralysis I am to some extent handicapped physically, but aside from what schooling I received from my father and mother I am indebted to no one for my achievements. The oldest of a family of six, four boys and a sister, I was the recipient of no special favors. Special favors are worse than paralysis. They almost always stupefy the energies of the recipient.

I learned dressmaking and millinery, cooking and housekeeping, clerked, taught school (fifteen years in one place), canvassed for magazines, invested in United States bonds and in real estate, and even wrote a short series of articles on dressmaking for FARM AND FIRESIDE, also one on cooking and one on The American Flag.

What Mr. Quick wrote with reference to the family pocketbook meets my views exactly. Domestic happiness is only assured when husband and wife are one, and each is competent to be trusted by the other. However, I am fully aware that some women are not to be trusted with money. Some women there are, also, who think that their husbands are not qualified to own property, and so it is that many successful men have everything in their wives' names, insuring second husbands a comfortable living and their own children a chance to shift for themselves. Every case offers a different problem.

E. C., Ohio.



The Spirit of Service

WHEN the land is storm-swept, when trains are stalled and roads are blocked, the telephone trouble-hunter with snow shoes and climbers makes his lonely fight to keep the wire highways open.

These men can be trusted to face hardship and danger, because they realize that snow-bound farms, homes and cities must be kept in touch with the world.

This same spirit of service animates the whole Bell telephone system. The linemen show it when they carry the wires across mountains and wilderness. It is found in the girl at the switchboard who sticks to her post despite fire or flood. It inspires the leaders of the telephone forces,

who are finally responsible to the public for good service.

This spirit of service is found in the recent rearrangement of the telephone business to conform with present public policy, without recourse to courts.

The Bell System has grown to be one of the largest corporations in the country, in response to the telephone needs of the public, and must keep up with increasing demands.

However large it may become, this corporation will always be responsive to the needs of the people, because it is animated by the spirit of service. It has shown that men and women, co-operating for a great purpose, may be as good citizens collectively as individually.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

555 New Songs and Music -- 10c

Oh Mr. Dream Man
On Moonlight Bay
Everybody's Doin' It
After the Honeymoon
Someone Loves You
For You Dear Heart
While You Are Mine
Anywhere With You
Love's Young Dream
Every Little Movement
Dream On Dear Heart
Garden of Dreams
Sweet Italian Love
Somebody Else Is Getting It
If You Talk in Your Sleep
Let Me Call You Sweetheart
When I Get You Alone Tonight
Sail On Silvery Moon
Green Grass Grow All Around
Send 10 cents for our New Song Album with the latest songs and music and get WITHOUT COST our Chart of Chords which teaches you how to play piano quickly, also illustrations how to dance all the latest dances, The Tango, The One Step, The Turkey Trot, etc., so plain you can easily learn.
All for 10 cents; 3 lots 20c. Address TANGO MUSIC CO., 1103 MONROE ST., CHICAGO



DO YOU WANT TO ENTER

the Temple of Music and enjoy familiar discourse with the great masters?

In the Emerson

PLAYER-PIANO

You will find a pass key which will not only open the doors but will make you a member of the great musical family with all its rights and privileges.

Write for Catalog.

Dealers in principal cities and towns



EMERSON PIANO CO., Boston, Mass.

Clothes for Maternity Wear and the Tiny Baby's Outfit

Designs by Grace Margaret Gould



No. 2456—Baby's Dress with Round Yoke

One size. Material required, two and one-half yards of thirty-six-inch material. The charm of this tiny baby's dress is its simplicity and daintiness. The price of this pattern is ten cents



No. 2187—Baby's Hood Cape: Two Lengths

One size only. Material required for long cape, one yard of thirty-six-inch. For short cape, three fourths of a yard of thirty-six-inch. The price of this pattern is ten cents



No. 2021—Baby Caps

6 months, 1 and 2 year sizes. Material for mob-cap, one-half yard of all-over embroidery, and one-fourth yard of twenty-four-inch material for strings; for fitted cap, one-half yard of twenty-seven-inch material, and one-half yard of embroidered edging for band. Pattern, ten cents



No. 2457—Baby's Gertrude Petticoat

One size. Material required, one and three-fourths yards of twenty-seven-inch material. The Gertrude petticoat should be made plain, with the exception of a little featherstitching or scalloping. Price of pattern, ten cents



No. 2159



No. 2458
No. 2459



No. 2159



No. 2458
No. 2459



No. 2455—Baby's Wrapper: Perforated for Sacque

One size. Quantity of material required for the wrapper, two and three-eighths yards of twenty-seven-inch material. For the sacque, one and three-eighths yards of twenty-seven-inch material. The price of this pattern is ten cents

No. 2159—Empire Maternity Gown with Guimpe

34 to 44 bust. Material for 36-inch bust, six and one-fourth yards of thirty-six-inch material, one yard of all-over lace, one fourth of a yard of contrasting material, and one and three-fourths yards of net or shadow lace required for guimpe. The price of this pattern is ten cents

No. 2458—Maternity Blouse: Long-Shouldered Effect

34 to 46 bust. Material for 36 bust, two yards of thirty-six-inch material, with one-half yard contrasting material and three and three-fourths yards lace. For guimpe, one-half yard of lining and three-eighths yard of net. Pattern, ten cents

No. 2459—Maternity Skirt: Draped in Front

24 to 36 waist. Material required for 24-inch waist, five and five-eighths yards of twenty-seven-inch material, or four and one-fourth yards of thirty-six-inch material. Width of skirt in 24 waist, two and one-half yards. Pattern, ten cents

No. 2460—Box-Plaited Maternity Waist

34 to 46 bust. Quantity of material required for 36-inch bust, two and five-eighths yards of thirty-six-inch material, or one and three-fourths yards of forty-five-inch material. The price of this box-plaited waist pattern is ten cents

No. 2461—Box-Plaited Maternity Skirt

24 to 36 waist. Material required for 24-inch waist, four yards of thirty-six-inch material, or three yards of forty-five-inch. Width of skirt at bottom in 24-inch waist, two and one-half yards. The price of this pattern is ten cents

No. 1924—Baby's Single-Breasted Coat

One size only. Material required, five and one-eighth yards of twenty-two-inch, or two and three-fourths yards of thirty-six-inch material. The price of this pattern is ten cents



No. 2460



No. 2461



No. 2460
No. 2461



No. 2158

No. 2158—Lapped-Over Coat: Single Rever

32, 36, 40, and 44 inch bust. Material for 36-inch bust measure, four and one-half yards of fifty-four-inch material, with three-fourths yard contrasting material. Pattern, ten cents

THE March 28th fashion page will show waists for spring and summer. The April 11th fashion page will show dresses, coats, and hats for spring and summer wear for the small girl and boy.

Pattern Coupon

Send to any of the following Farm and Fireside offices:

Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1554 California Street, Denver, Colorado.

Enclosed please find.....cents, for which please send me the following patterns:

No..... Size.....
No..... Size.....
No..... Size.....
No..... Size.....

Name.....

Address.....



No. 2455



No. 1924



No. 2187



No. 2455



No. 1927—Baby's Plain Slip

Pattern cut in one size only. Quantity of material required, four and three-fourths yards of twenty-two-inch, or two and one-half yards of thirty-six-inch material. Pattern, ten cents



No. 1927



No. 1926



No. 1926—Wrapper with Yoke

Pattern cut in one size only. Material required, three and one-half yards of twenty-seven-inch material, or two and one-fourth yards of thirty-six-inch material. Price of pattern is ten cents



No. 2188—Baby's Yoke Dress

One size only. Quantity of material required, two and one-half yards of thirty-six-inch material, with one eighth of a yard of embroidery for yoke. The price of pattern is ten cents



No. 2188



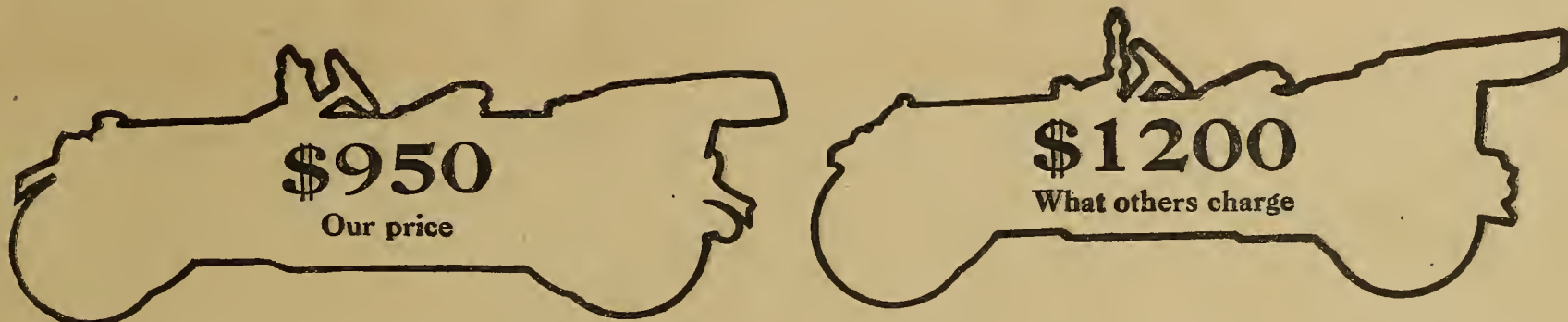
No. 1925



No. 1925—Baby's Bishop Dress

Cut in one size only. Material required, four and one-half yards of twenty-two-inch material, or two and one-fourth yards of thirty-six-inch material. Price of pattern, ten cents

Overland



You Think They Are Different— But Are They?

TOO many people are fooled or misled by taking bare automobile prices as a positive indication of the intrinsic value of a car. This is exactly the wrong way to go about it. Because one article is priced higher than another it does not follow that that article has a greater value.

The picture above illustrates this point. Here are two cars practically identical. The one on the left is the \$950 Overland. The one on the right is the average similar car—priced at \$1200—which offers no greater value.

As a matter of fact there are any number of \$1200 cars which are not, in value, the equal of the \$950 Overland.

But how are we to know this?—you ask.

That's simple. Ask some real questions; find out some actual facts; make some specification comparisons—and then it is the easiest

thing in the world to sum up the intrinsic value of any car made.

For instance:

The \$950 Overland has a wheel base of 114 inches.

The wheel base of the average \$1200 car is no longer than this—often shorter. So in this respect you get more for \$950 than you do for \$1200.

The \$950 Overland has a powerful 35 horsepower motor.

No \$1200 car has a larger motor than this. Here is equal value and, in most cases, more value for less money.

The \$950 Overland tires are 33 inches x 4 inches—all around.

No \$1200 car has larger tires. Again—equal value—our price \$250 less.

The \$950 Overland has a complete set of electric lights—throughout—the same as on most \$1200 cars. Some out-of-date cars still cling to the obsolete gas lamps. In

the first instance the \$950 electrically lighted Overland is the value equal of the \$1200 car, and in the second instance has more value than the \$1200 (gas lamp) car. In either case our price is \$250 less.

Next comes the matter of equipment. The \$950 Overland is complete—a jeweled speedometer, top, curtains, boot, windshield, electric horn—everything complete. No \$1200 car made has more complete or better equipment.

And so on throughout the car. Point for point—specification for specification, the \$950 Overland is, in every essential respect, the equal of any \$1200 car on the market.

So we warn you. Ignore the prices. Compare the actual facts first. Then compare the facts with the prices and you get the intrinsic value.

We are making 50,000 cars this year—the largest production of its kind in the world. And every Overland purchaser will save at least 30% and get a superior car.

See the Overland dealer in your town today. Then see any competing car. Make the comparisons we suggest. Then you will better realize how hard a comparison of this kind is, on any other car costing in the neighborhood of \$1200.

Handsome 1914 catalogue, complete information and dealers name on request.

The Willys-Overland Company, Dept. 62, Toledo, Ohio

SPECIFICATIONS OF MODEL 79T

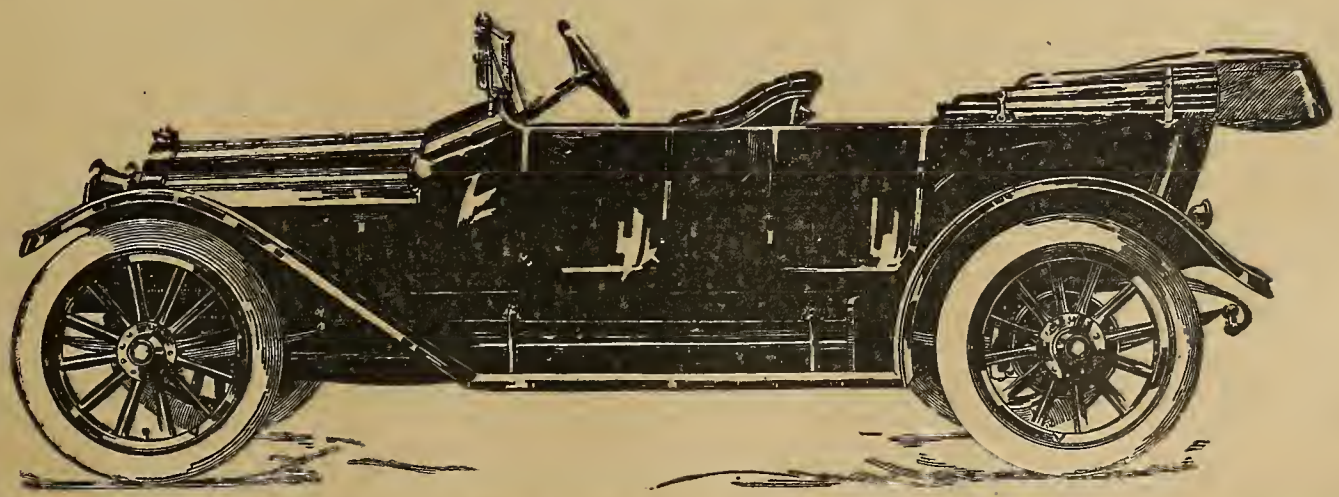
Electric head, side, tail and dash lights
Storage battery
35 Horsepower motor
114-inch wheelbase
33x4 Q. D. tires

Three-quarter floating rear axle
Timken and Hyatt bearings
Deep upholstery
Brewster green body

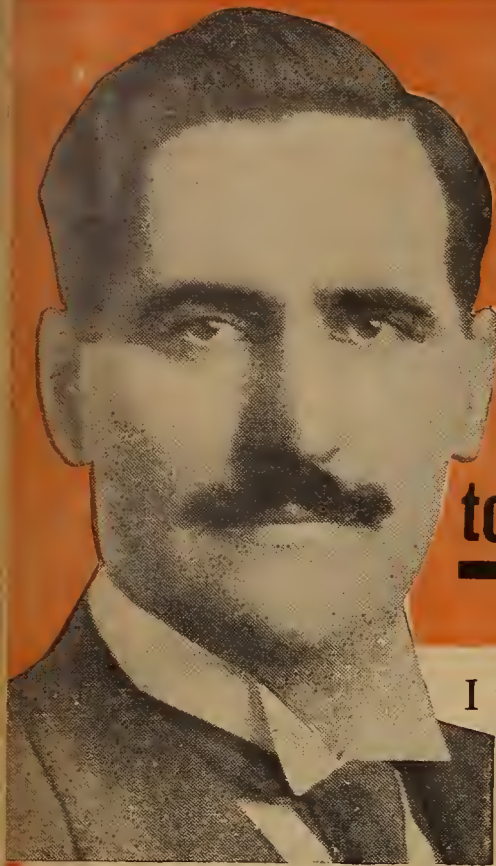
Nickel and aluminum trimmings
Mohair top, curtains and boot
Clear-vision, rain-vision windshield

Stewart speedometer
Cowl dash
Electric horn
Flush U doors with concealed hinges

With electric starter and generator—\$1075
f. o. b. Toledo



Manufacturers of the famous Overland Delivery Wagon, Garford and Willys-Utility Trucks. Full information on request.



I Want Every Reader of Farm and Fireside to Write Me for My Catalogs

Wm. Galloway

I want you—the man who is holding this paper in his hands right now—to write to me right away. I'm making a special appeal to FARM AND FIRESIDE folks. I've got something special to offer every one of you. I know what kind of farmers read this great magazine. They're my kind—the up-to-date, wide-awake kind—the kind I like to do business with. You know what I've done in the past—saved more money for the farmers of this country and given them a squarer deal than any other manufacturer. That's why I've been able to build up a mammoth business here in so short a time. Now, this year I'm going to break all my own records. And I'm going to do it by putting some special propositions right up to the best farmers in the country. I'm going to make you some offers that are so amazing that you simply can't get away from them. Over one hundred and fifty thousand farmers know by actual experience that

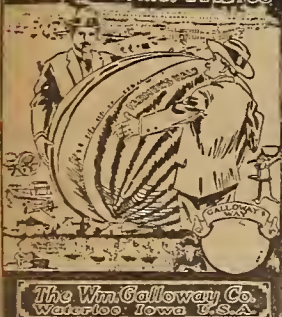
THE ONLY WAY IS THE GALLOWAY

And I want you to be the next one. I want to show you just what a man can do for you when he will sell you direct from his own factories to your farm. I want you to see for yourself what an amazing difference it makes in prices when you don't have to pay one single middleman's profit. Write me—you won't be under the slightest obligation. Just get this wonderful story. I'll show you how you can save hundreds of dollars in the next year alone. I'll give you the evidence—then let you decide. Send me the coupon or a postal or letter right now.

I'm Going to Tell You Some Inside Facts About My Business

I haven't any secrets about my business. The more my farmer friends know about my affairs the better I am satisfied. I've made good—but I know that every bit of my success is due to the fact that every single man who does business with me has found that he can trust me absolutely. I'm a farmer myself—always have been and always will be. I was born and raised on a farm and I know what you're up against when it comes to buying right, because I've been through the mill myself. That's why I got into this business. I need to sell farm implements for other people. I didn't keep at it very long because I saw with my own eyes every day, the actual evidence that the farmer simply couldn't get a square deal and his money's worth so long as he had to pay a lot of middlemen's profits which were always loaded onto the real value of the goods. Why, I could tell you of any number of cases where the profits were so much greater than the real value of the article that it seems almost unbelievable. I made up my mind to see if the cheaper and better way wasn't to manufacture my own goods—making them just the best that they could be made—and sell them direct to the farmers at actual factory cost with only one very small factory profit added. I started out in a small way because I didn't have much money. But it didn't take long to prove that my faith in the intelligence and buying judgment of the men on the farms was founded on solid rock. My business has been tremendous right from the start. My profits have been small—smaller than almost any other manufacturer in the country. And I'm going to keep 'em that way. I'd rather make a small profit and sell a lot of goods than a big profit on a few goods. Of course, I've made enemies among the other manufacturers, who tell me I am "spoiling business." I'm sorry because I don't like enemies—but I am working to help you get your goods at a fair price. Naturally the dealers don't like me very well either. For I stand in the way of their big profits. That's why a lot of them have gone out of their way to misrepresent my business. They can't do that for very well any longer, now, for I've made a \$5,000.00 Challenge Offer to any man or company in the world who can prove that every word of Galloway's story is not true right down to the last detail, or can disprove that my factories are not exactly as shown in that every statement and claim I make is true. I'll send you a copy of this challenge offer when you write me. Besides that, I protect every single man who does business with me with a \$25,000.00 Cash Guarantee Bond that makes it just as safe for you to do business with Galloway as with the United States Government. Now, I want you to find out just what all this means to you in cold, hard cash. I've enlarged my line tremendously for 1914. I am offering more bargains and bigger bargains than I have ever been able to before. I want you to get the proof for yourself.

Now Send for My New Book of Bargains FREE



book one single day longer. It's free. Send for it right away.

Send This Coupon or a Postal or Letter NOW.

MAIL FREE COUPON NOW

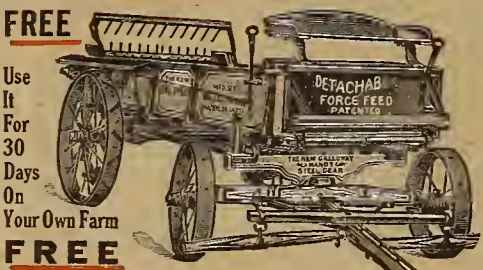
Wm. Galloway, Pres., WM. GALLOWAY CO., 397-A Galloway Station, Waterloo, Ia.

I want to know all about your Special 1914 offer. Tell me all about it and send me the books I have checked below, by return mail, FREE.

- ☐ BOOK OF BARGAINS—A big 124 page book in two colors with a thousand and more bargains in implements, huggies, harness, furniture, rugs, carpets, etc. Everything for the home and family.
- ☐ MANURE SPREADING CATALOG—and valuable book of information "Streak of Gold."
- ☐ ENGINE BOOK—and my book "Proof of the Pudding."
- ☐ SEPARATOR BOOK—and my new, big, illustrated Dairy Cow Book, FREE.

Name.....
Town.....
R. F. D.....

Don't Send Me One Cent I'll Ship You This Spreader FREE



Use It For 30 Days On Your Own Farm FREE

Not one cent down. No bank deposit. Keep your money in your own pocket. I just want you to try my new Spreader, that's all. Try it right on your own farm for a whole month free. Test it out as you wouldn't think of testing any other spreader in the world. Pile on the manure a foot and a half above the box. Put on all she'll hold. Take the fine powdered stuff or the toughest, heaviest, trampled-down, along-hay kind from the calf-yard. If it's frozen, so much the better. Take it into your field, whip your team to a gallop and SLAM IT IN GEAR! Say, I know that's an awful test. So do you! A test no other manufacturer dares even suggest to you. But do you think for a minute I'd ship you a spreader, and let you abuse it that way if I didn't know it would make good? I know what I'm doing. I've made the same offer for seven years, and the Galloway to-day is better than ever. 40,000 farmers have proved it. Besides giving you the best Spreader made at any price.

I'LL SAVE YOU \$25 TO \$45

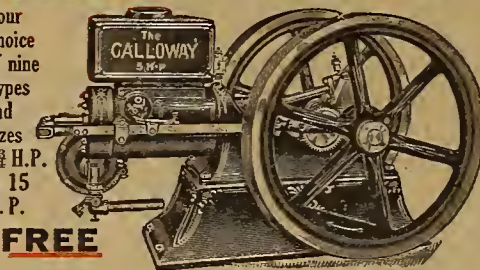
Try the Galloway and see for yourself what it will do. The best proof of all is the machine itself—eleven patented features—all exclusive with the Galloway—double drive chains furnishing power from both wheels alike direct to the heater and moving the load. The only endless apron force feed, roller bearing feed spreader built. Makes the Galloway worth \$25 more than any other spreader sold to-day. Low down—easy to load—light draft—two horses will handle it easily. Pull between wheels entirely on the reach—and many other special features. I can't tell them all—just get my catalog before you buy any other make or style of spreader. Nine different styles and sizes to select from. You are certain to find just the machine you need most for your purpose. Write me. Get my free spreader book and valuable free book of information, "A Streak of Gold." Write now. Do it to-day.

Catalog AND REGULAR \$1.00 Book "A Streak of Gold" FREE



The only book of its kind in the world. It tells you in clear, plain English, just the practical facts that every man ought to know about fertilizing. Tells how to handle manure, how to treat it, keep it and use it to the very best possible advantage. Worth a hundred dollars to any business farmer. Regular price, one dollar. Free to you when you write me. Be sure to send for this famous book to-day.

Three Months' Power FREE My Superb 1914 Galloway Engine Sent on FREE TRIAL



Your Choice of nine Types and Sizes 1 1/2 H.P. to 15 H.P. FREE

Mean it? You bet I mean it! I'm going to make you an offer right now that you absolutely can't afford to refuse. Listen to this: I'll let you use a genuine 1914 Galloway Gasoline Engine right on your farm for a whole month absolutely free. If that isn't long enough, just say so and I'll let you keep it for a month or even two months longer. I'll let you pick out any one of my nine different models you want. I'll let you put it to any test you want. I want you to compare it point by point with any engine on the market, and I don't care what the other engine costs. I'll put the Galloway up against any other engine, absolutely regardless of the price. But, remember, when you buy from me, I'LL SAVE YOU \$50 TO \$300.

Can you beat that? Never! I'll put the whole thing right square up to you. You handle the engine yourself—make it do your work day after day for one month, two or three. I won't send any salesman or dealer around to help you make up your mind. I know I can bank on my engine and your judgment. Your word goes. After you have had the free trial if you think that there is one other engine on the market at any price that is anywhere near the Galloway in quality, workmanship or actual performance, just send the engine right back and I'll pay the freight both ways, so you won't be out a single cent. Or, if you find that the Galloway is so far ahead of your expectations that you simply can't afford to get along without it, you may keep it and on the square, straightest and most liberal offer that you or anybody else ever heard of.

Now you can't beat that offer anywhere. No man living can go further than I have to show my perfect confidence in my goods and insure the absolute satisfaction of every man I deal with. My engines have got to be so perfect in every way that they simply sell themselves, that's all. My big, beautiful engine catalog is yours for the asking, free. Write for it today.

FREE SERVICE BUREAU

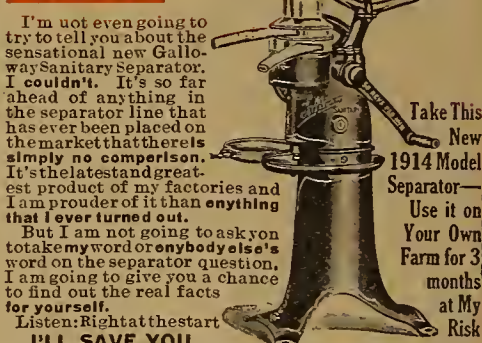
I've got a bunch of engine experts that you can't beat anywhere in the country and their services are at your command absolutely without charge. They'll help you solve every one of your engine problems, tell you just which engine is best suited for your particular purpose, how to fit up your power house, how to handle your engine and use it to best advantage. This service is free to you always whether you buy an engine from us or not.



Get My Engine Book and 90-Day Offer FREE

Now don't miss this splendid offer. Don't lay down this paper—don't even turn the page until you have sent for this splendid Engine Book and full explanation of my new 1914 plan. Just fill out the coupon and mail it to-day—or drop us a postal. Find out the real facts about gasoline engines. Don't take anybody's word—put yourself! Send the coupon or a postal or letter for this valuable book and my special Engine Offer NOW.

Let Me Send This New Galloway Sanitary Separator On 90 Days' Trial FREE



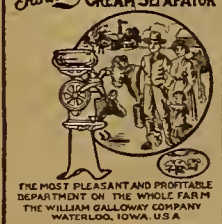
I'm not even going to try to tell you about the sensational new Galloway Sanitary Separator. I can't. It's so far ahead of anything in the separator line that has ever been placed on the market that there is simply no comparison. It's the latest and greatest product of my factories and I am proud of it more than anything that I ever turned out. But I am not going to ask you to take my word or anybody else's word on the separator question. I am going to give you a chance to find out the real facts for yourself. Listen: Right at the start I'LL SAVE YOU \$25 TO \$50

Then, I'll let you try my new Improved Galloway Sanitary any way you want to. I'll send you one of these wonderful new separators, any size you want, right to your farm for 30, 60 or 90 days' trial absolutely free. I want you to test it out in every way that you can think of. Compare it with any other machine that you know of no matter what the price. If anybody else is trying to sell you a separator, make them let you take their machine and set it right up by the side of mine. Take the skin milk from one machine and run it through the other—that will tell the story! Then examine its wonderful patented features. See how simple it is—how easy to operate and how very, very easy to clean. See how perfectly it is made in every single part. And notice the new improved features that make it the most sanitary separator built.

Take a month, if you want to, or keep it two or even three months if you prefer. Then decide. I won't hurry or bother you in any way. If you think that there is any other separator in the world at any price that you would rather have than the Galloway, just ship it right back to me at my expense. I'll agree right now to pay all the freight both ways so that you won't be out a penny or under the slightest obligation if you decide not to keep the separator after having had the free trial.

If you decide to keep it, I'll guarantee to save you from \$30 to \$50 besides giving you a separator that absolutely has no equal in the world at any price.

Write for My Big 1914 SEPARATOR BOOK FREE



Get my new 1914 Separator Book right away. Pick out the machine you want—tell me and let me send it to you for three months' use and trial free. You can't possibly take any chances on the kind of an offer I am making you. And you can see for yourself that I must have a wonderful machine to be able to make you that kind of a proposition. Find out. Use the coupon or a postal or letter. Send NOW.

Fill Out the Coupon-Get My

Four Great Books all FREE

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